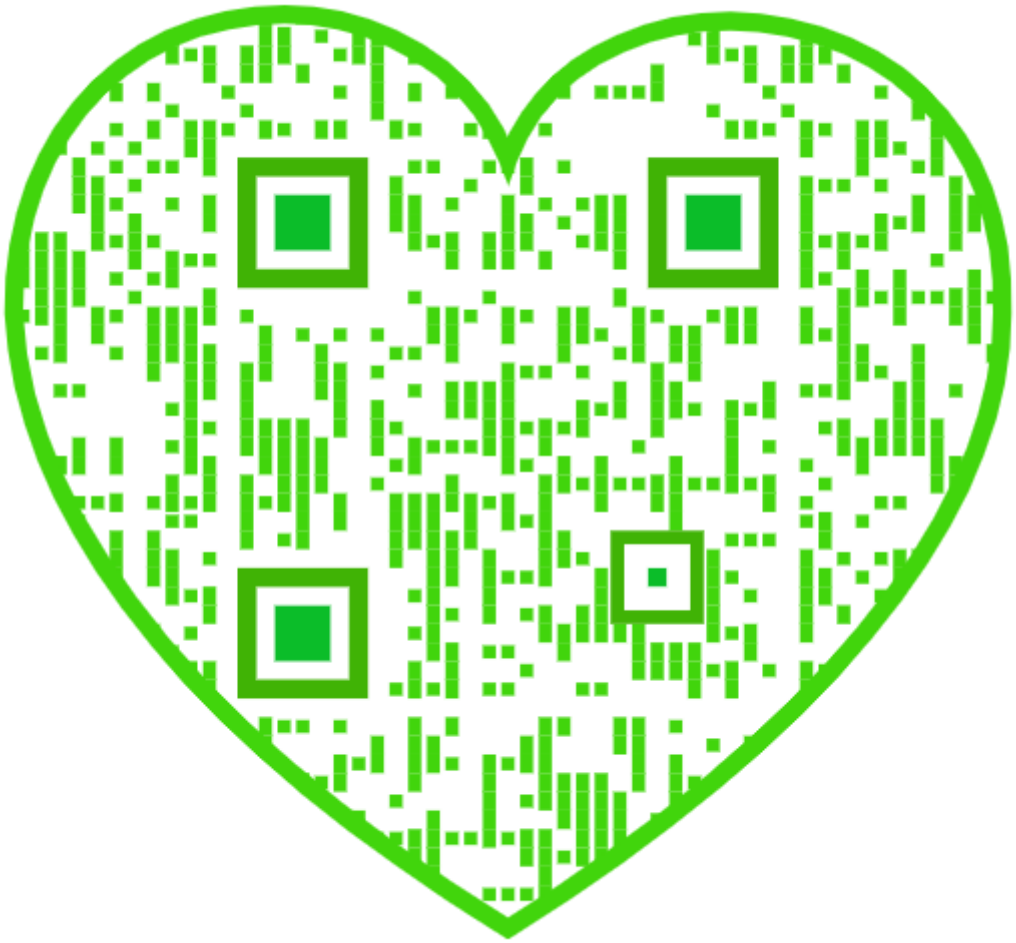
SIG semi-automatic Rifles SG 550 SP and SG 551 SP Caliber 5.56 mm (.223)

Manual



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1. Safety rules

-The shooter should always consider the weapon as loaded and ready to fire until he has personally convinced himself of the contrary by unloading it.

-Use only commercial grade ammunition.

-Use only ammunition that corresponds to the caliber of the weapon.

-During all manipulations point the weapon in a safe direction.

- Never aim the weapon at any object you do not intend to shoot at.

-Do not load the weapon until immediately before use.

-Do not place your finger on the trigger until the target has been sighted.

-Unload weapon immediately after shooting is finished.

-Detach bolt and magazine from the weapon prior to transportation.

- Keep weapon and ammunition separately and under lock and key.

-Never leave the weapon unattended and keep it out of the reach of children.

2. WEAPON THEORY

2.1 Weapon description

2.1.1 General

The semiautomatic SIG SG 550/551 SP is a gas operated weapon with rotary bolt mechanism. The operation and maintenance of the standard version SIG SG 550 and the short version SIG SG 551 are identical.

SIG SG 550 SP

Standard version with folding butt, bipod and carrying sling

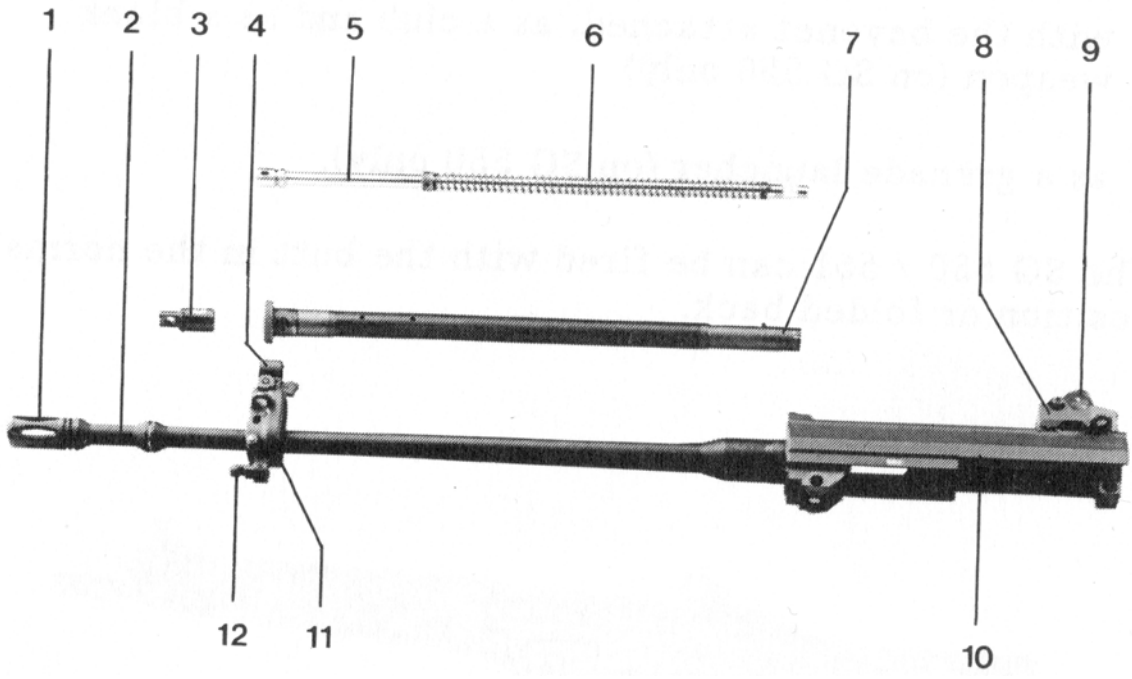
SIG assault rifle SG 551

Short version with folding butt.

2.1.2 Barrel with receiver and gas system

The barrel is screwed into the receiver. The muzzle is fitted with a flash suppressor. The front sight mount, which is fixed to the barrel, contains the gas port, accepts the front sight and gas system and also serves as a support for the handguard.

The receiver guides the bolt and houses the locking system.
The rear sight mount with diopter drum is also mounted on top of the receiver.



Barrel with upper receiver and gas system

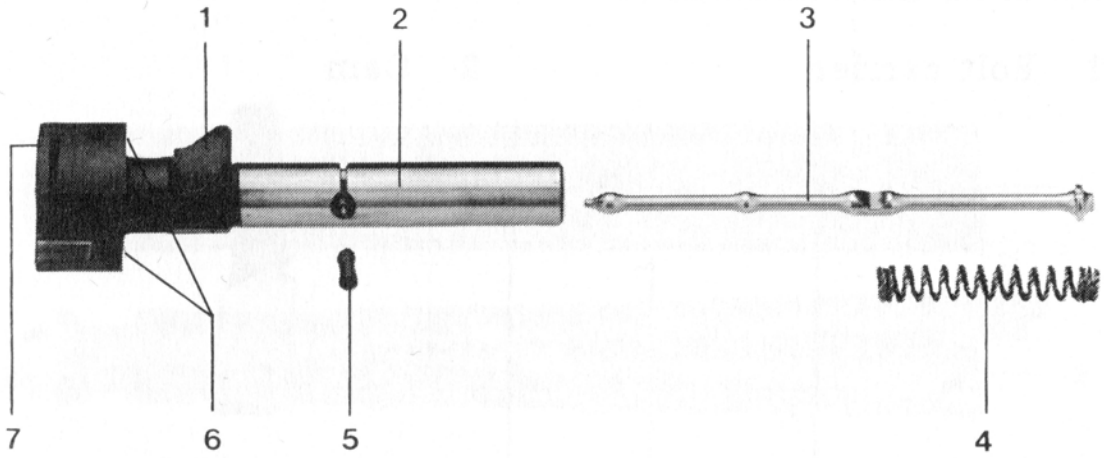
1. Flash suppressor
2. Barrel
3. Gas valve
4. Front sight
5. Gas piston
6. Recoil spring
7. Gas tube
8. Rear sight mount
9. Diopter drum
10. Receiver casing
11. Front sight mount
12. Bayonet lug (on SG 550 only)

2.1.3. Bolt

The bolt consists of two main parts:

-bolt head
-bolt carrier

a. Bolt head
The bolt head locks the bolt assembly, houses the firing pin and the extractor and feeds the cartridge to the chamber.

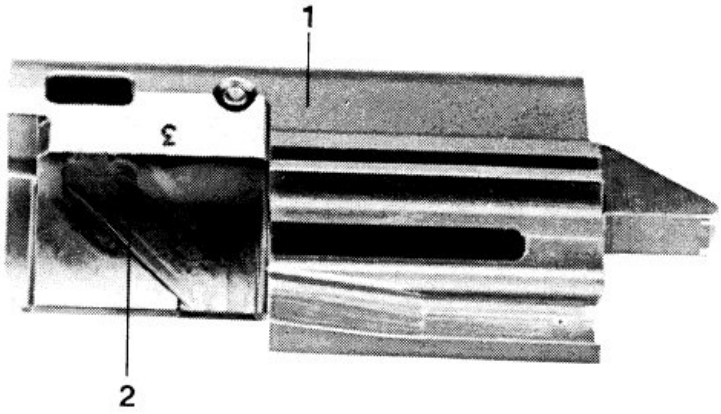


Bolt head

1. Control cam
2. Bolt head
3. Firing pin
4. Firing pin spring
5. Firing pin retaining stud
6. Locking lug
7. Extractor

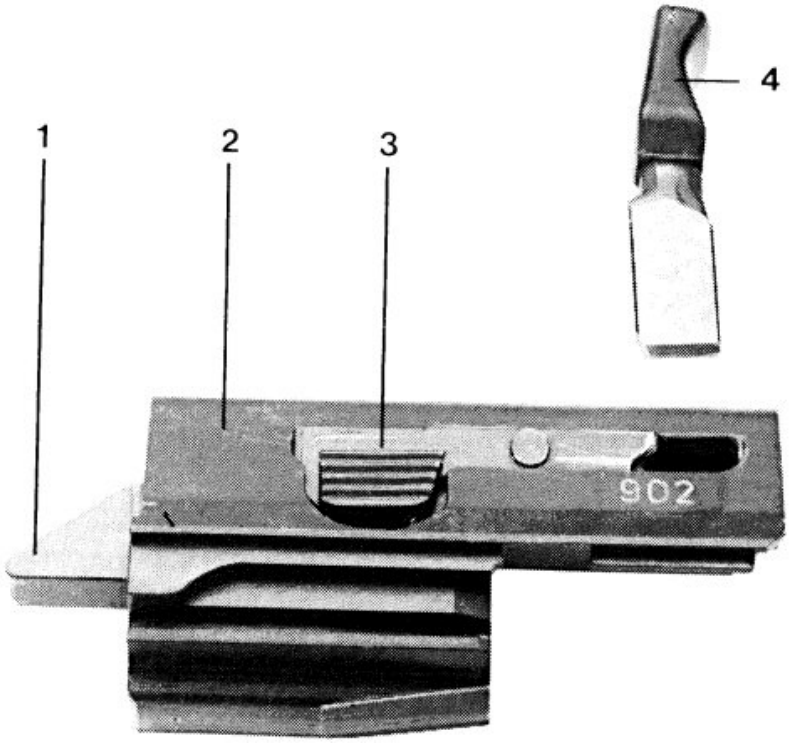
b. Bolt carrier

The bolt carrier guides the bolt head, controls the locking and unlocking by means of the cam, connects the bolt to the gas system and cocks the hammer.



Bolt carrier from left

1. Bolt carrier
2. Cam

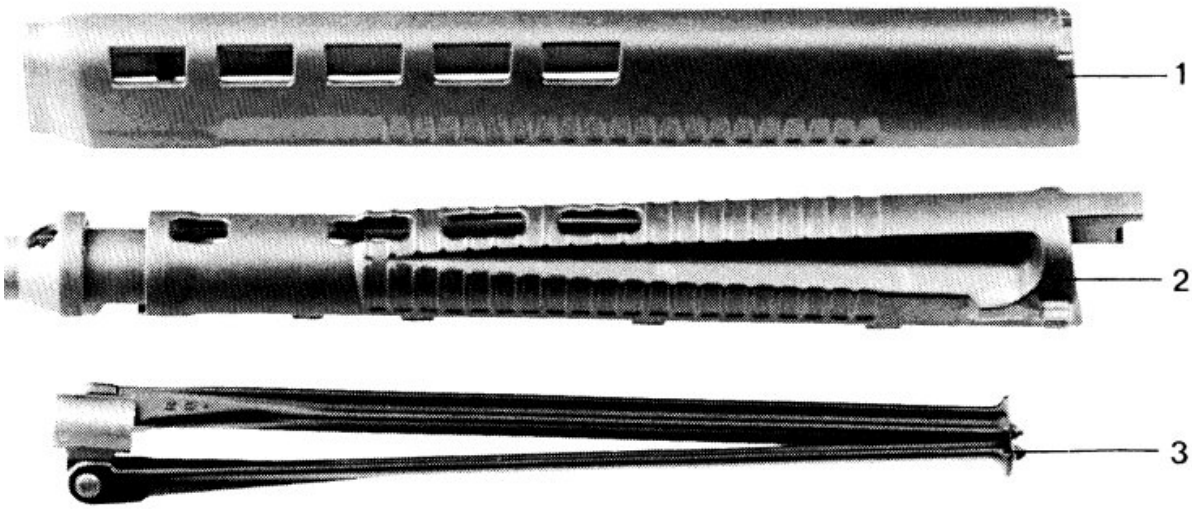


Bolt carrier from right

1. Cocking lug
2. Bolt carrier
3. Bolt handle catch
4. Bolt handle

2.1.4. Handguard and bipod

The handguard protects the barrel and the gas system from damage and provides heat protection. The bipod on the SIG SG 550 can be used to support the rifle when firing.



Hand guard with bipod

1. Handguard, upper part
2. Handguard, lower part
3. Bipod

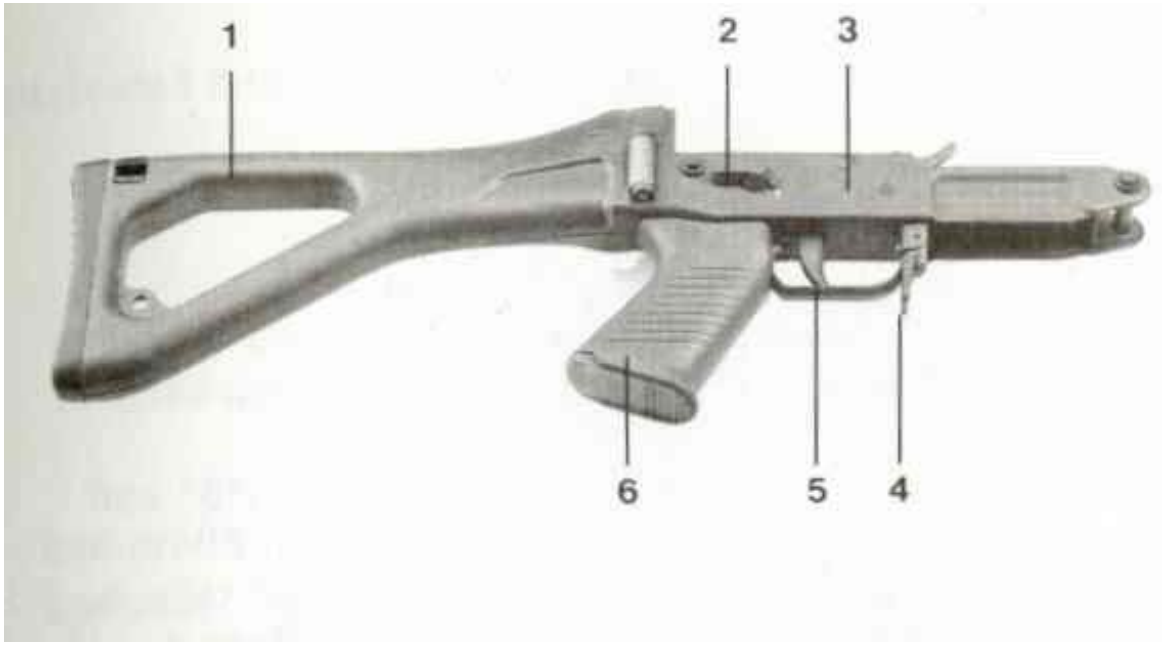
2.1.5. Trigger assembly and butt

The trigger assembly comprises all the parts required for siring a shot. The safety lever on both sides can be set to two positions.

Position "S"	The weapon is locked in the safe position.
Position "1"	The weapon will fire semi auto.

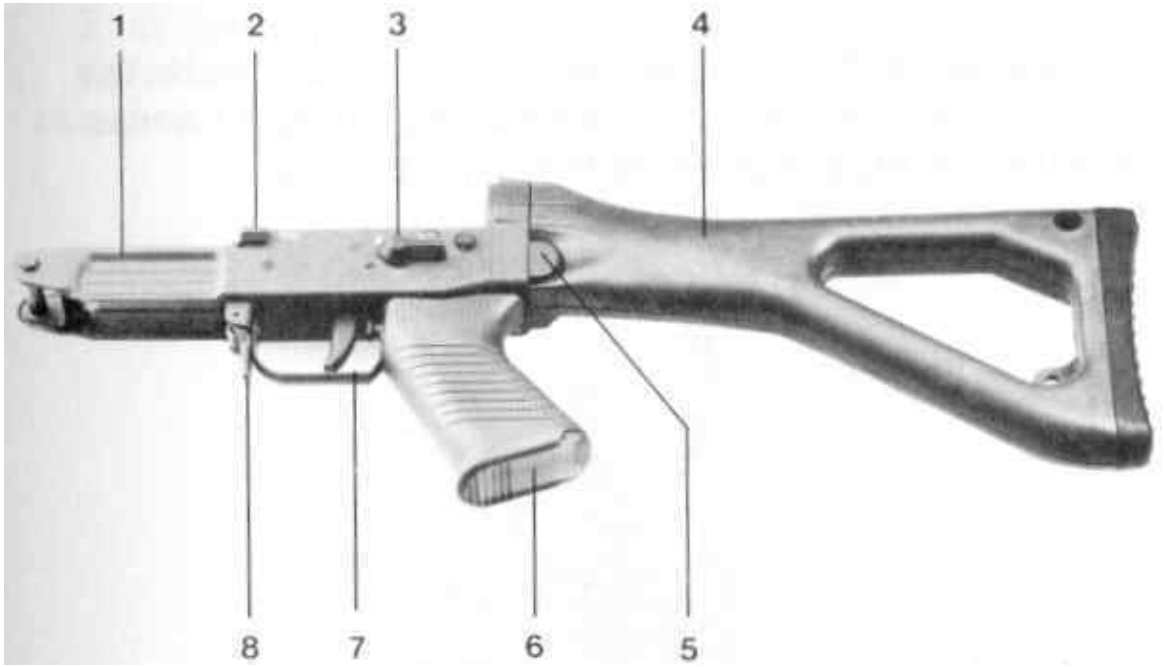
By pivoting the trigger guard to the right or left side, the trigger becomes accessible for shooting with mittens. For safety reasons the trigger guard must not be shifted until just before firing the weapon, and after firing it should be immediately replaced in the normal position.

The folding butt is made of high strength synthetic material.
In the firing position it is held by the butt locking mechanism, and when folded it's held by spring pressure on the handguard.



Trigger assembly and butt from right

1. Butt
2. Safety lever
3. Trigger casing
4. Magazine catch
5. Trigger
6. Pistol grip



Trigger assembly and butt from left

1. Trigger casing
2. Bolt catch
3. Safety lever
4. Butt
5. Butt catch
6. Pistol grip
7. Trigger guard
8. Magazine catch

2.1.6 Sights mechanism

The sights mechanism comprises the rear sight and foresight.

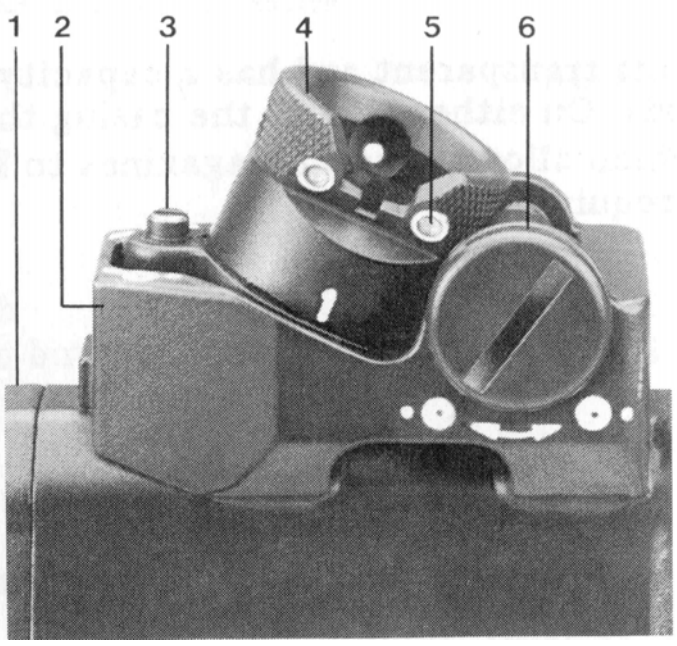
The rear sight is made up of the:

- Rear sight mount
- Diopter drum
- Windage correction screw
- Elevation correction screw

The diopter drum can be set to positions "1", "2", "3", and "4", corresponding to firing ranges 100 m, 200 m, 300 m, and 400 m. The positions marked in white correspond to aiming point = point of impact.
The red "3" position corresponds to aiming point "black 6" at 300 m.

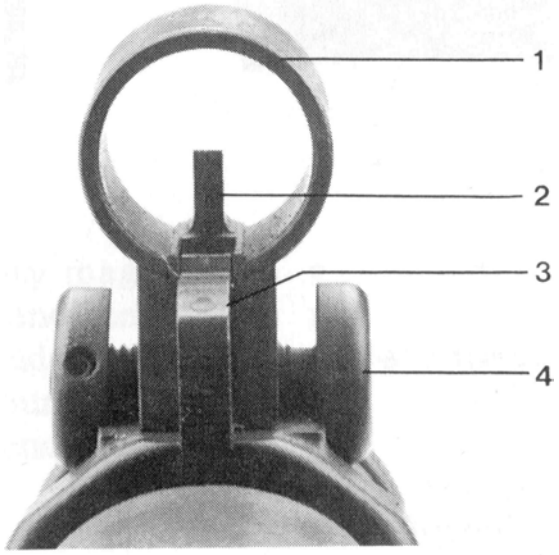
Sighting position "1" is designed for immediate firing, and two luminous dots are fitted laterally for aiming at night.

The foresight with tunnel is fixed to its mount with the foresight screw. A folding foresight is provided for use at with the night sights on the diopter drum.



Rear sight assembly

1. Receiver casing
2. Rear sight mount
3. Elevation correction screw
4. Rear sight drum
5. Night sight
6. Windage correction screw

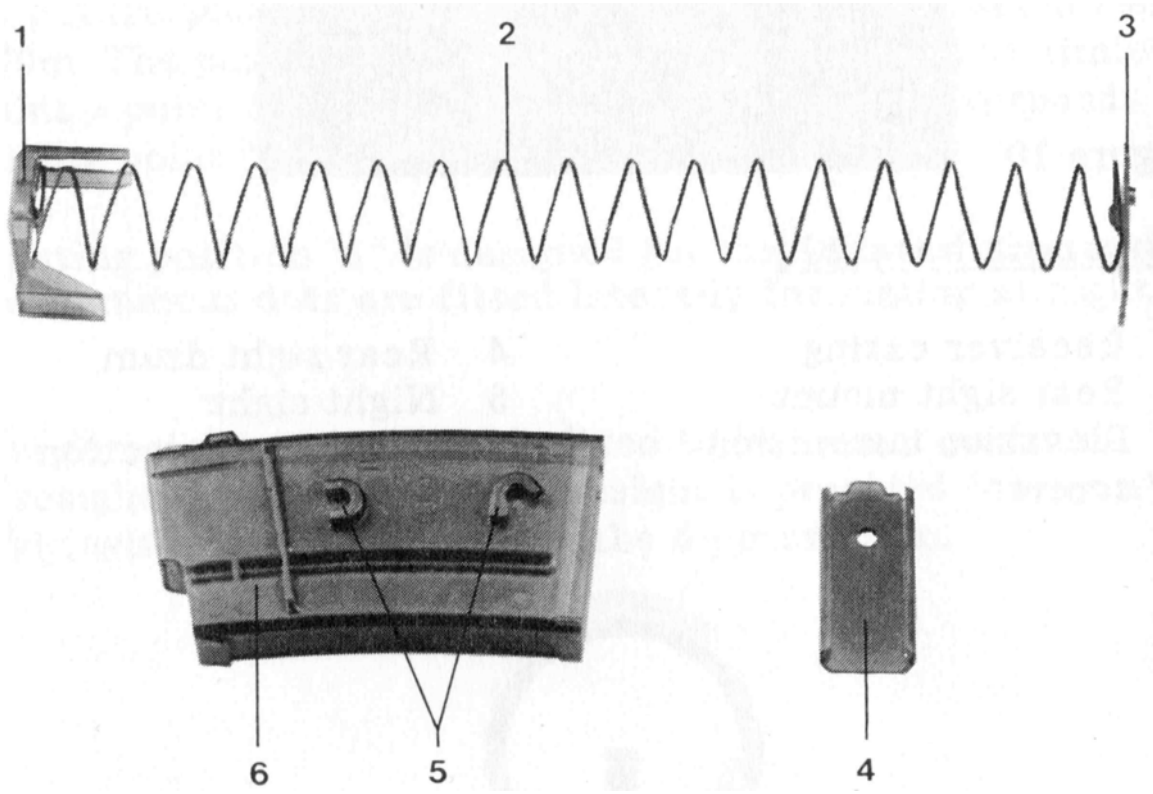


Front sight

1. Front sight tunnel
2. Front sight
3. Night front sight
4. Front sight screw

2.1.7. Magazine

The magazine is transparent and has a capacity of twenty or thirty rounds. On either side of the casing there is a mechanism, that allows several magazines to be connected if required.



Magazine, dismantled

1. Feeder
2. Magazine spring
3. Magazine floorplate catch
4. Magazine floorplate
5. Magazine coupling lugs
6. Magazine casing

2.2. Technical specifications

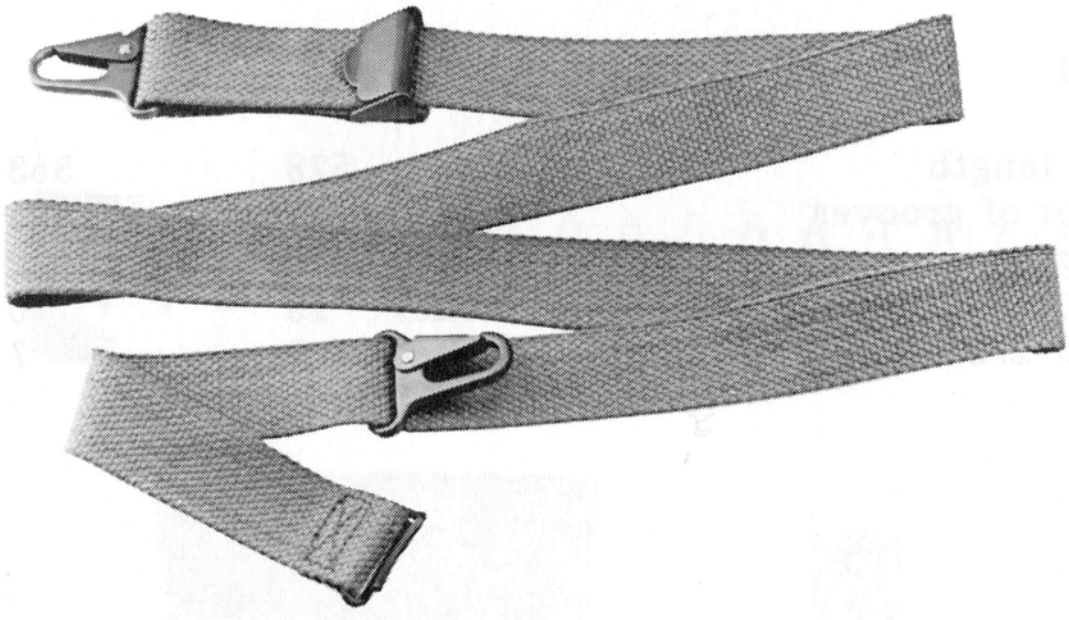
			SG 550	SG 551
Dimensions		inches		
Caliber		inches	.223	.223
Total length		inches	39.29	34.53
Length with butt folded		inches	30.39	25.63
Barrel				
Barrel length		inches	20.78	16.02 (USA) 14.3 (others)
Number of grooves			6	6
Rifling:				
SG550-1/ SG551-1	right	inches	10	10
SG550-2/ SG551-2	right	inches	7	7
Sights				
Type			Diopter sights	
Sight base		mm	21.26	18.34
Range adjustment		m	100 to 400	
		yards	110 to 440	
Weight				
Weapon incl. empty magazine		lb	9.03	7.49
Empty 20 rd. magazine		oz	3.35	3.35
Empty 30 rd. magazine		oz	3.87	3.87
Loaded 20 rd. magazine		oz	11.99	11.99
Loaded 30 rd. magazine		oz	16.75	16.75

Subject to change without notice

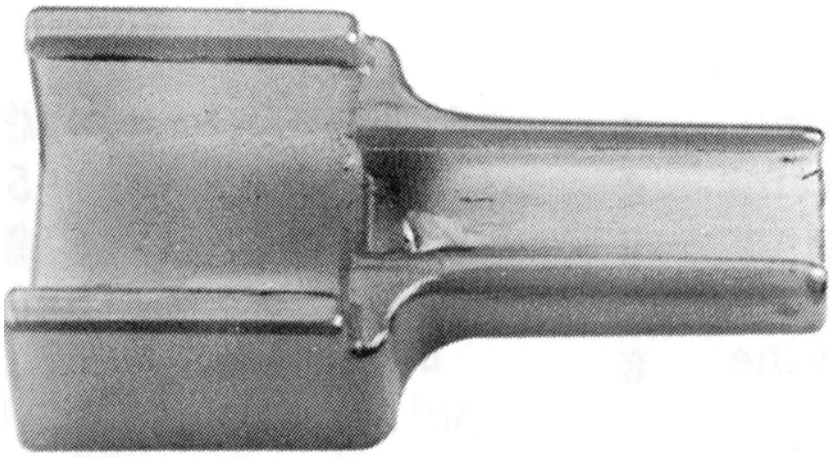
2.3. Accessories

Every SIG assault rifle SG 500/551has the following accessories:

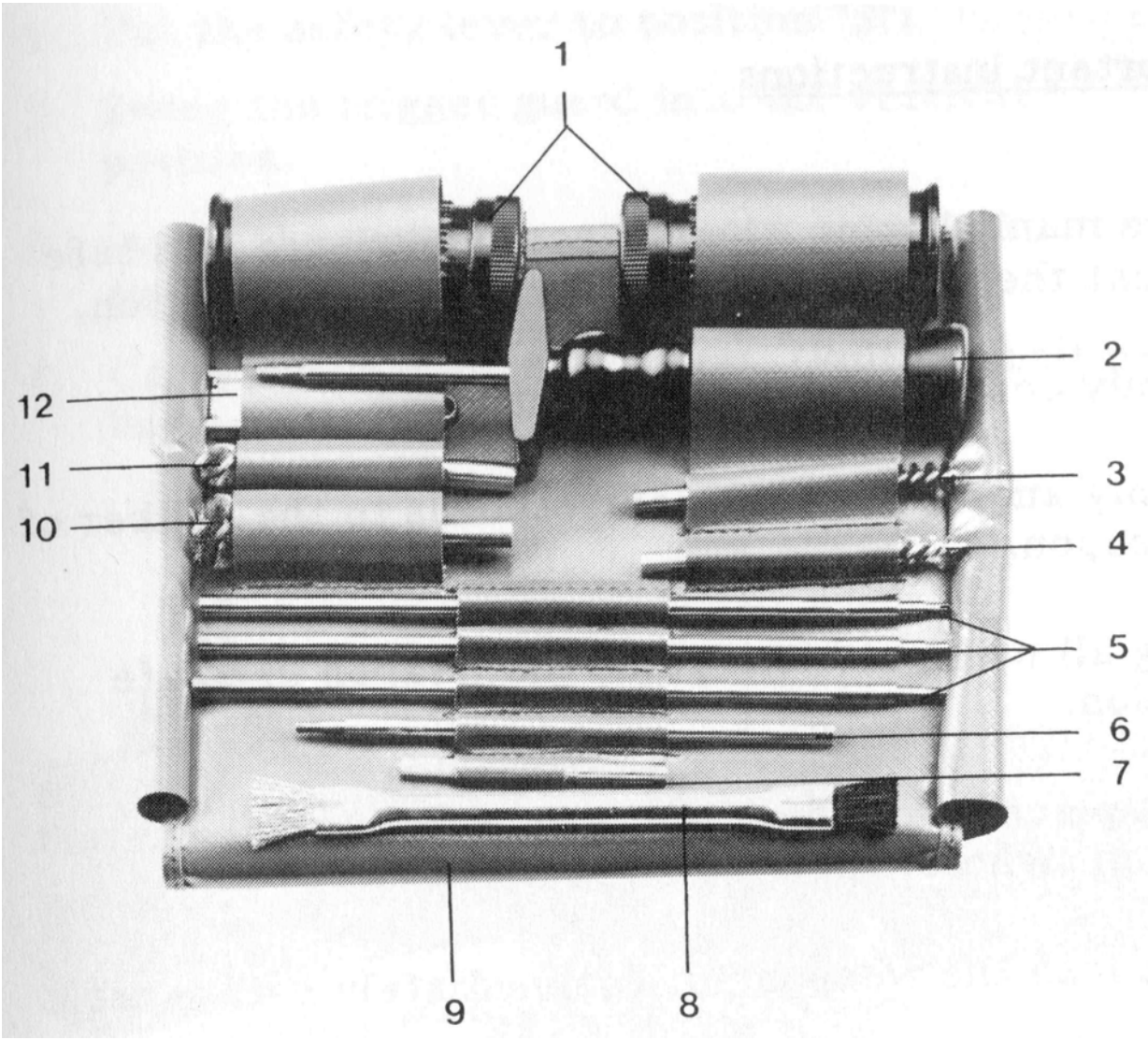
- Carrying sling
- Loading aid
- Cleaning kit



Carrying sling in woven nylon with two hooks, an adjustment clip and a buckle



Loading tool



Cleaning kit

1. Weapon grease tube
2. Cleaning rod handle
3. Grease brush
4. Barrel brush
5. Cleaning rod sections
6. Extension rod with ferrule
7. Cleaning jag
8. Cleaning brush
9. Simileather case
10. Gas tube brush
11. Chamber cleaning tool
12. Barrel inspection mirror

3. Handling

3.1 Important instructions

- Before manipulation the weapon, make sure that it is safe and that the trigger guard is put in the vertical position.
- Use only commercial grade ammunition.
- Use only ammunition that corresponds to the caliber of the weapon.
- During all manipulations point the weapon in a safe direction.
- Do not place your finger on the trigger until the target has been sighted.
- Do not load the weapon until immediately before use.
- Unload weapon immediately after shooting is finished.
- Detach bolt and magazine from the weapon prior to transportation.

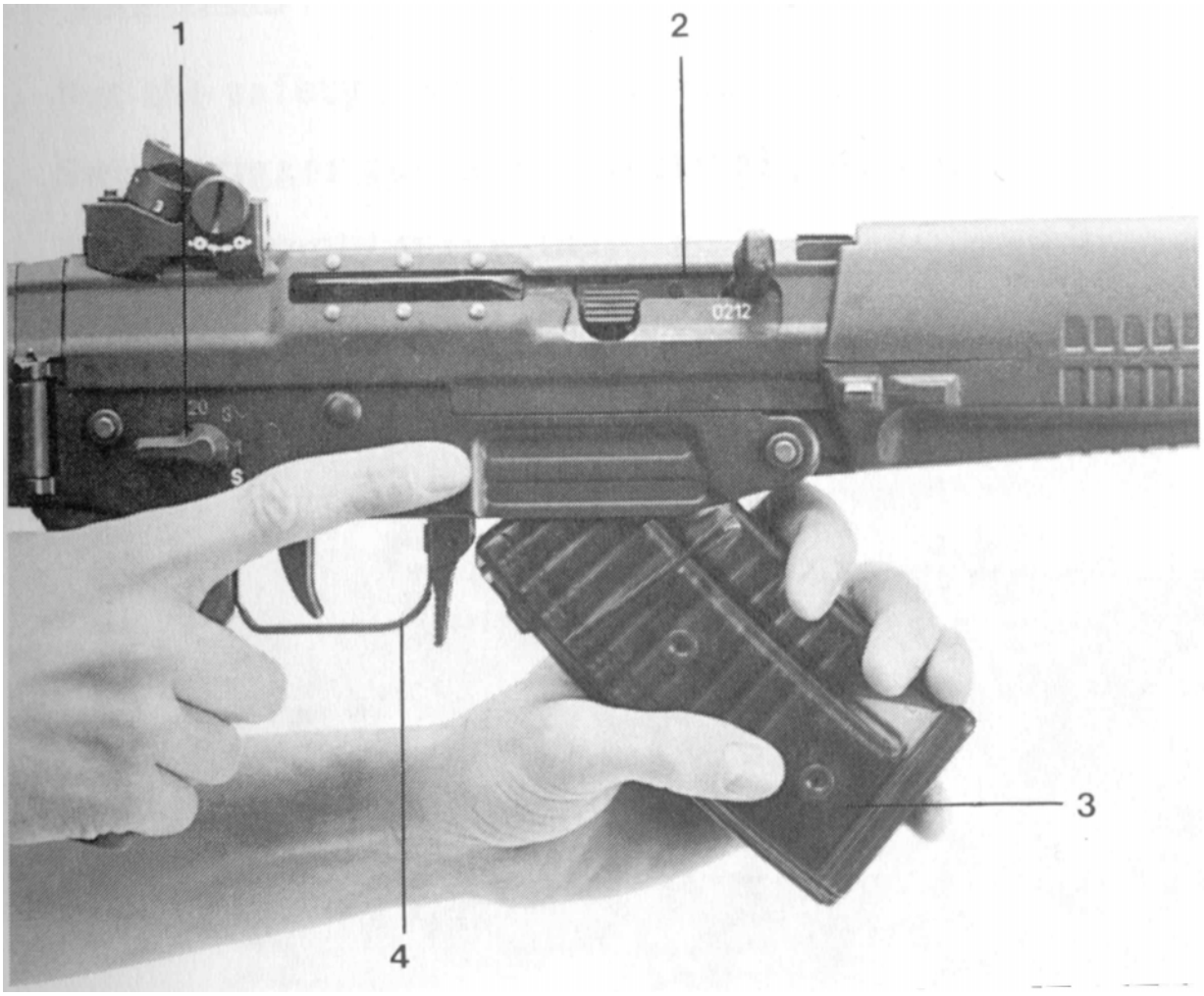
3.2. Loading the weapon

1. Put the safety lever to position "S";

2. Swing the trigger guard into the vertical position;

3. Insert the magazine and check that it is properly seated by pressing forward;

4. Carry out loading movement. (Pull the bolt handle fully back and let it fly forward)

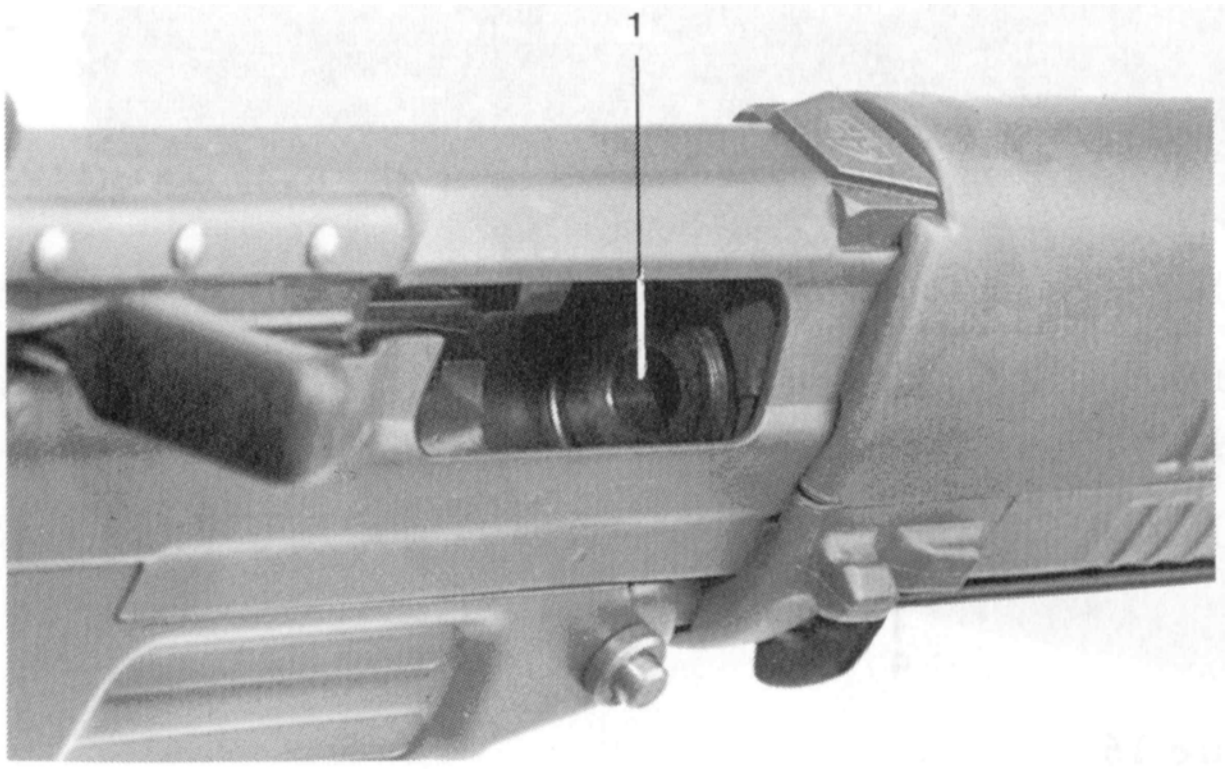


Inserting the magazine

1. Safety lever
2. Bolt
3. Magazine
4. Trigger guard

3.3. Unloading

1. Put safety lever to position “S”;
2. Swing trigger guard into vertical position;
3. Remove magazine by pressing magazine catch;
4. Carry out loading movement, with bolt retracted check for empty chamber;
5. Switch safety lever to “1”, pull trigger (with weapon pointing downrange), switch safety lever to “S”.



Check the chamber

1. Chamber

3.4. Changing the magazine

1. Put safety lever to position "S";
2. Swing trigger guard into vertical position;
3. Remove magazine;
4. Insert loaded magazine and check that it is properly seated by pressing forward.

3.5. Reloading

1. Put safety lever to position "S";
2. Swing trigger guard into vertical position;
3. Remove magazine;
4. Insert loaded magazine and check that it is properly seated by pressing forward;
5. Push the bolt catch up or pull back the bolt handle slightly and allow the bolt to fly forward.

Push the bolt catch up

3.6. Filling and coupling of magazines

3.6.1. Filling the magazine

1. Place the tool on magazine;

2. Insert the ammunition clip and press cartridges into magazine;

3. Remove loading tool.

3.6.2. Coupling of magazines

1. Hold magazine vertically;

2. With the floorplate of the second or third magazine pointing to the rear, firstly connect the upper lugs, the rotate forward and connect lower lugs.

Coupling of more than three magazines in sequence is not recommended.

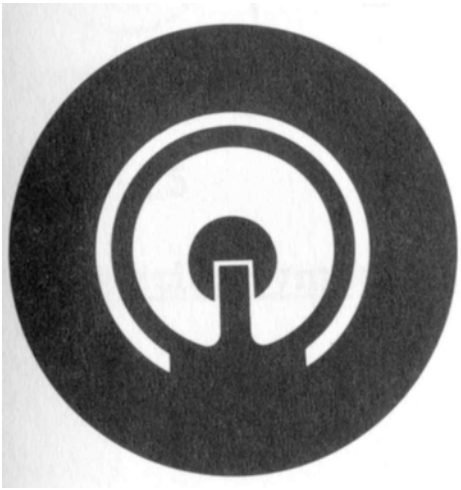
Loading the cartridges into the magazine by means of the loading tool

Coupling of magazines

3.7. Aiming, firing

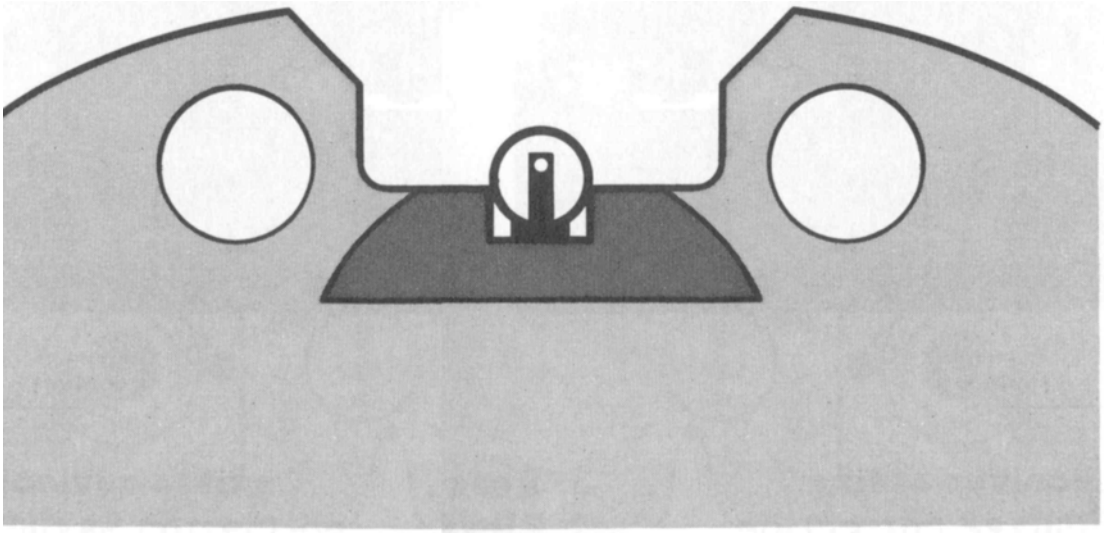
To aim, align the eye, diopter or battle sight, foresight and target. When using the diopter, ensure that the periphery of the foresight tunnel and the diopter aperture are concentric.

At all ranges the foresight should be aimed at the center of the target. Firing is therefore to point of aim.



Sight picture point of aim

Bull's eye 6 o'clock with sight setting "red 3" at 300 m.

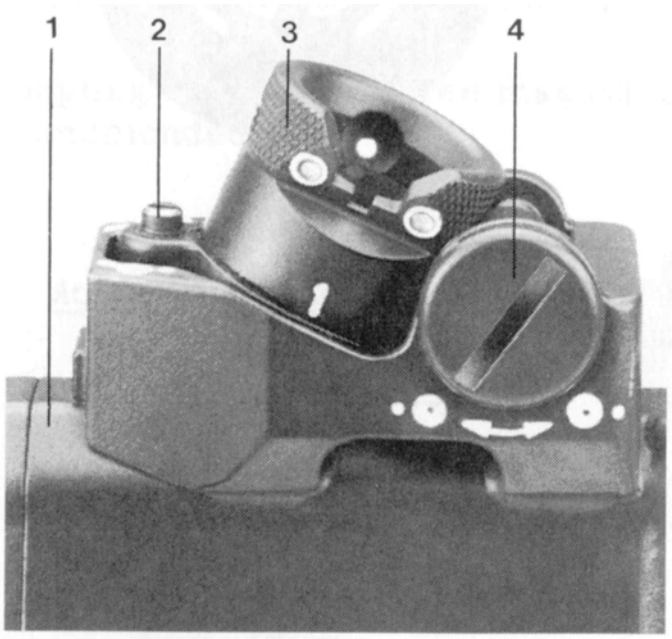


Sight picture night sight

3.8. Adjusting

To correct for elevation and windage, the corresponding correction screw is turned with a screwdriver.

By rotating the elevation correction screw and the windage correction screw by one click, the average point of impact in the vertical respectively the horizontal axis is displaced by approximately 0.15 $^{o}/_{oo}$.



Rear sight

1. Receiver casing
2. Elevation correction screw
3. Rear sight drum
4. Windage correction screw

Elevation:

High shots are corrected by turning the elevation correction screw to the left.

Low shots are corrected by turning the elevation correction screw to the right.

Correction symbol on rear sight (correction of elevation)

Windage:

Shots to the right are corrected by turning the windage correction screw to the left.

Shots to the left are corrected by turning the windage correction screw to the right.

Correction symbol on rear sight (correction of windage)

Firing range	Average point of impact correction per notch	
	SG 550	SG 551
100 m	1.5 cm	1.8 cm
200 m	3.0 cm	3.6 cm
300 m	4.5 cm	5.4 cm
400 m	6.0 cm	7.2 cm

To correct for elevation or windage, the corresponding correction screw is turned with a screwdriver.

3.9. Gas valve position

With the SIG SG 550/551, the gas volume required for the function of the weapon can be controlled by adjusting the gas valve.

a. Position I (Rib of gas valve in vertical position)

Under normal conditions, firing is effected in this position.

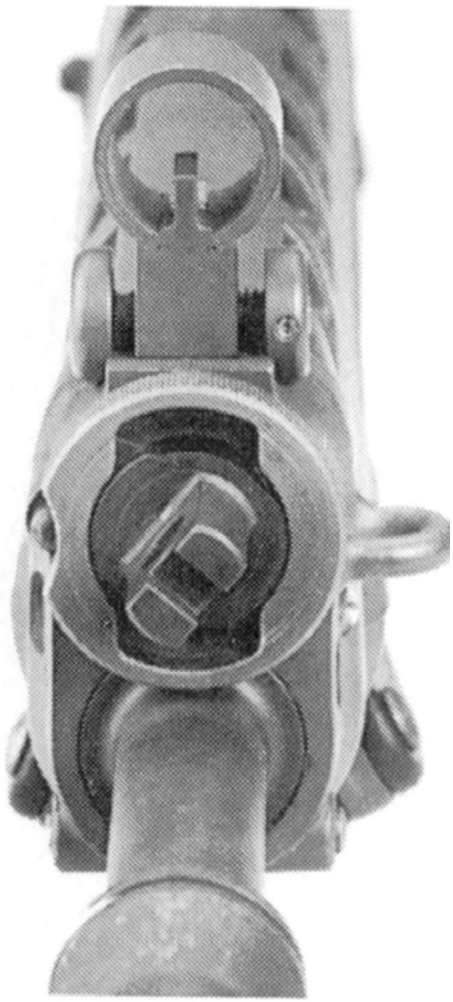
Gas valve in position I

b. Position II (Rib of gas valve in slanting position)

When cycling or ejection problems are encountered due to heavy fouling or icing-up, the gas valve is to be turned clockwise as far as the stop. In this position, a larger gas quantity acts on the gas piston.

The adjustment of the gas valve is effected manually, and, in case of a hot or heavily fouled weapon, by means of a cartridge or auxiliary aid.

Firing with the gas valve in position II is an exception. As soon as the weapon works, the gas valve must be turned back to position I, otherwise the recoil is intensified and the weapon is unnecessarily stressed.



Gas valve in position II

3.10. Folding the butt

Thumb in the butt catch and fold the butt so that it registers with the handguard under spring pressure.

Butt folded

1. Butt catch
2. Butt

3.11 Firing with mittens

For firing with mittens the trigger guard can be pivoted to the left or right.
For safety reasons the trigger guard must be placed in the vertical position before carrying out any manipulations.

Trigger guard folded

1. Trigger casing
2. Trigger guard

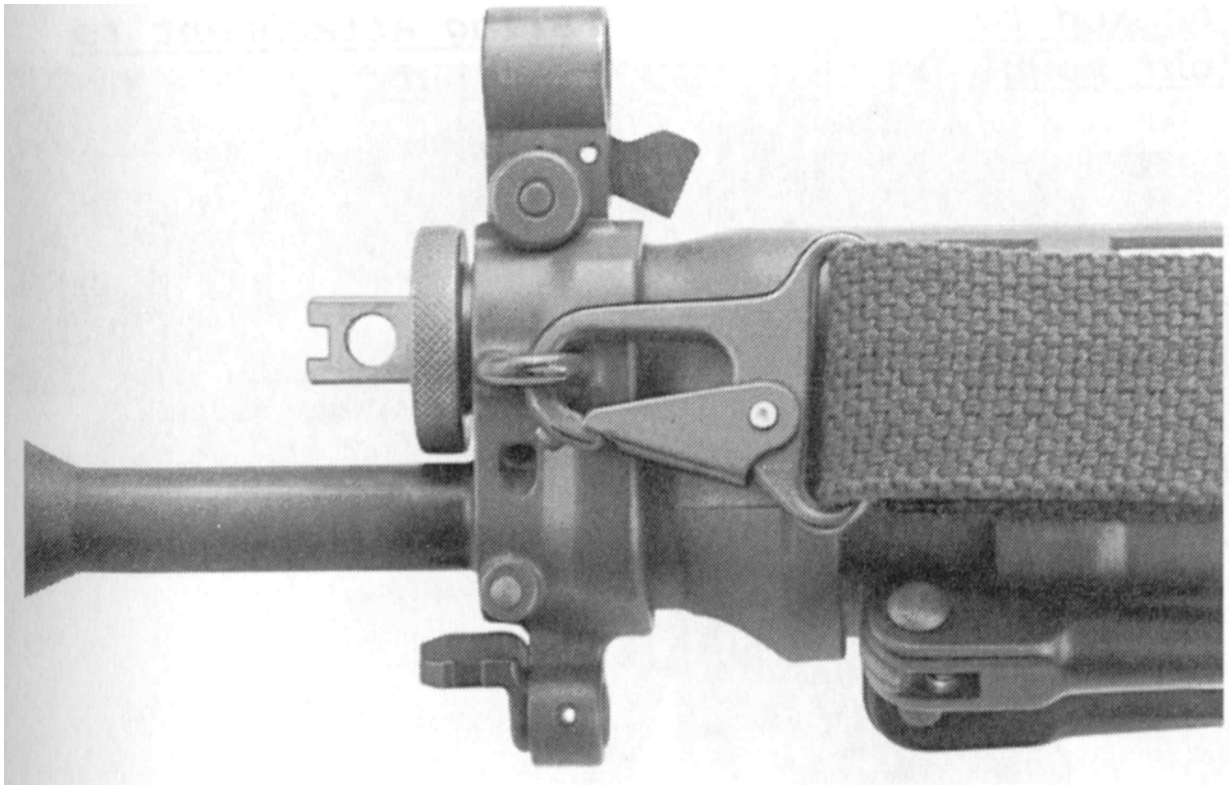
3.12. Use of accessories

3.12.1. Carrying sling

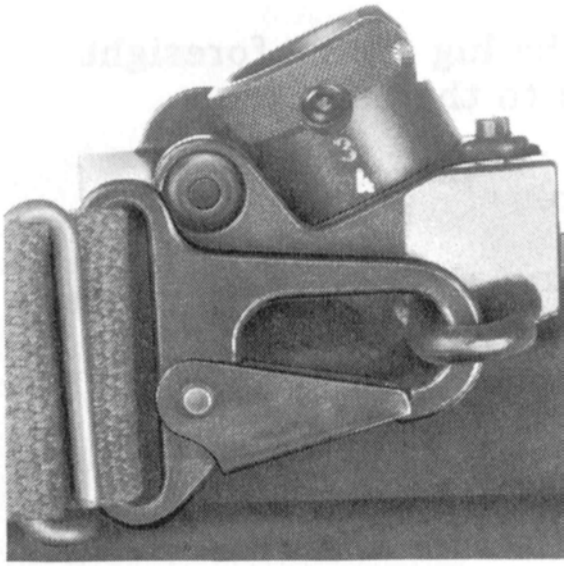
One end of the sling hooks into the lug on the foresight mount, the other end is attached to the butt.

To fix the taut sling, use the clip.

To maintain a taut sling, slip the clip over the sling strap.



Sling hooked to foresight mount



Sling hooked to rear sight mount

Sling attachment to the butt

Fix the taut sling

3.13. Field stripping

1. Unload weapon;

2. Remove carrying sling;

3. Press the rear trigger casing stud from both sides and withdraw it from the stud head side as far as the stop;

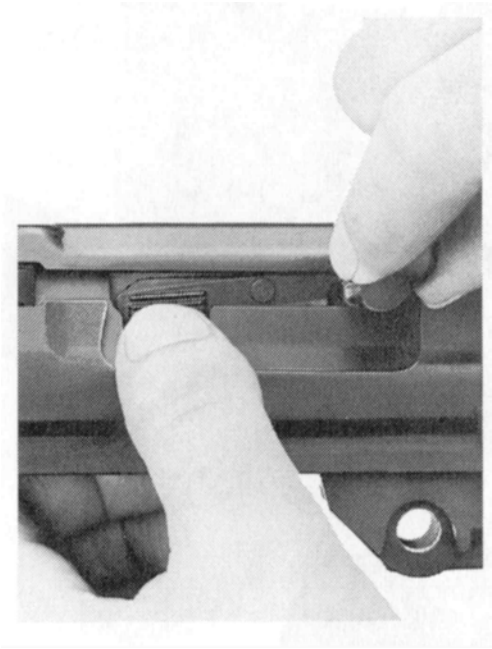
4. Lay the weapon on its left side and swing out the trigger assembly;

5. Withdraw the front trigger casing stud as described in point 3 and remove the trigger assembly;

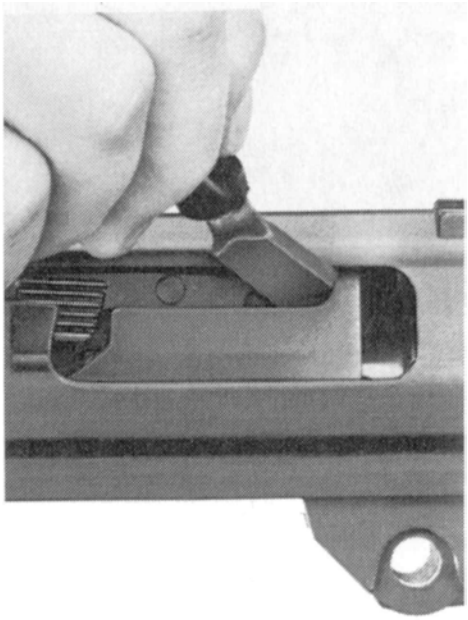
Remove the trigger housing stud

6. Press down the bolt handle catch and remove the bolt handle;

7. Use the bolt handle to push the bolt to the rear, remove the bolt from the receiver;

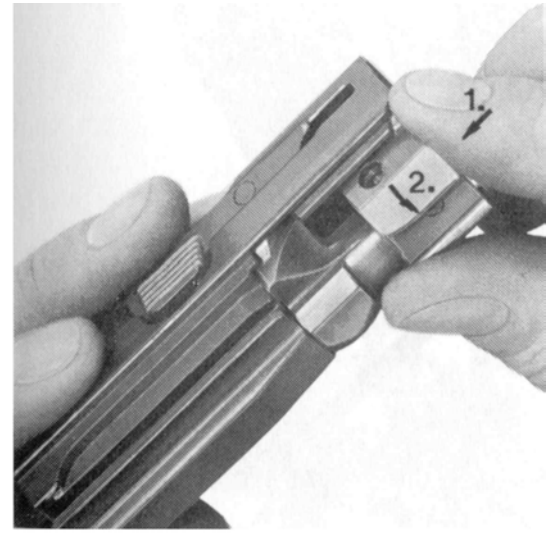


Remove the bolt handle



Push the bolt to the rear, using bolt handle

8. Twist the bolt head to remove it from the bolt carrier;

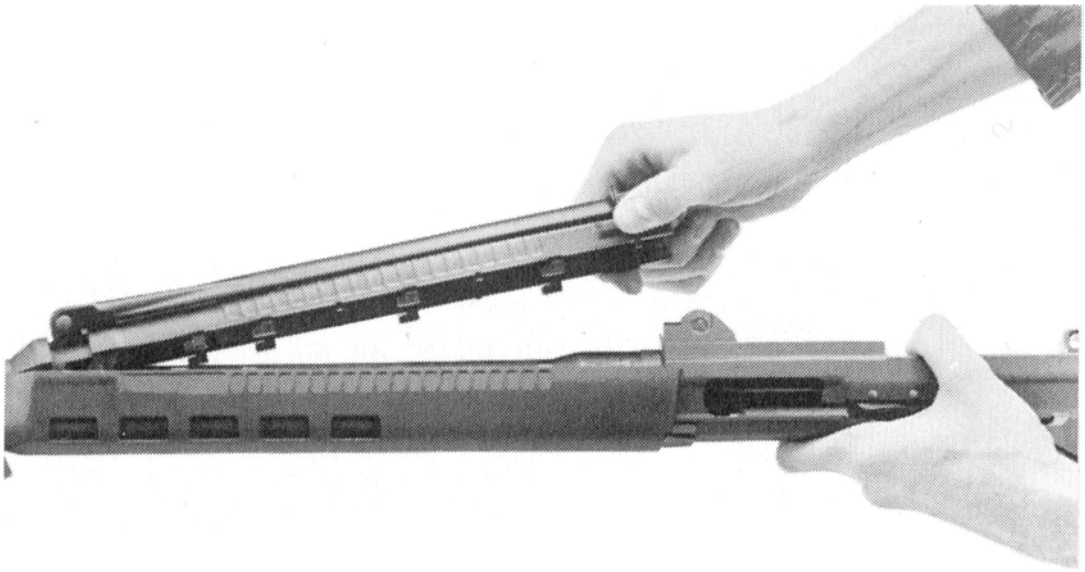


Remove bolt head

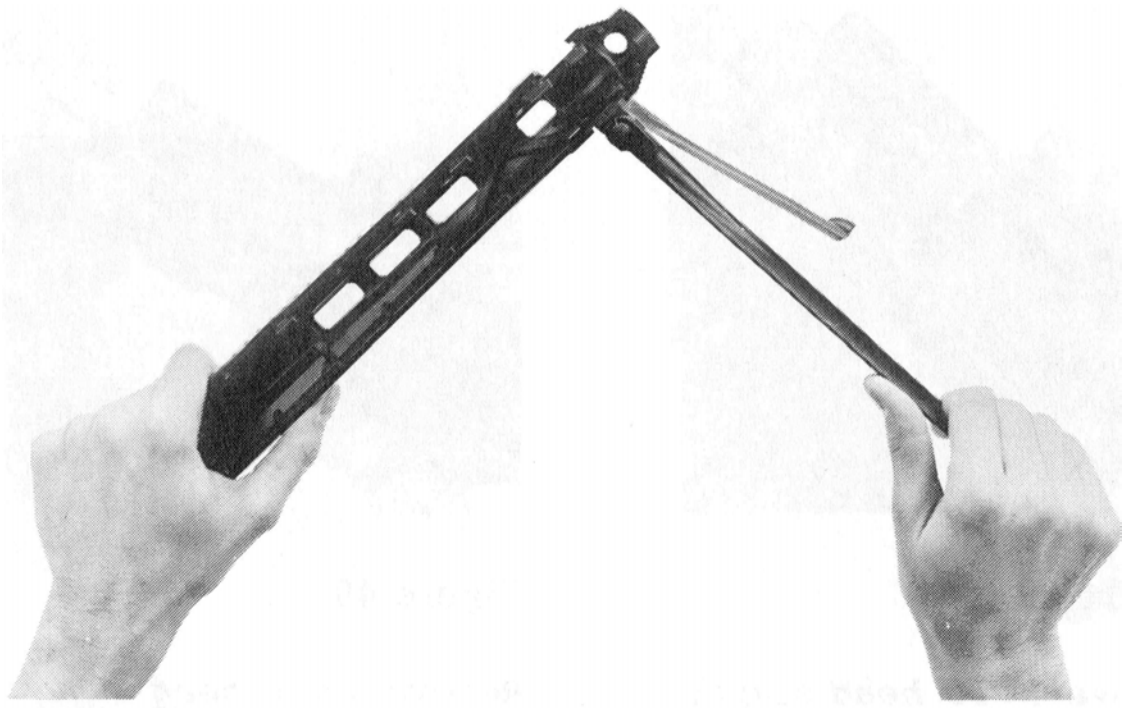
Remove bolt head

9. Pull lower handguard to the rear and remove; swing out the bipod legs and remove laterally;

10. Lift upper handguard at the rear and remove at the front sight mount;



Lift off lower handguard



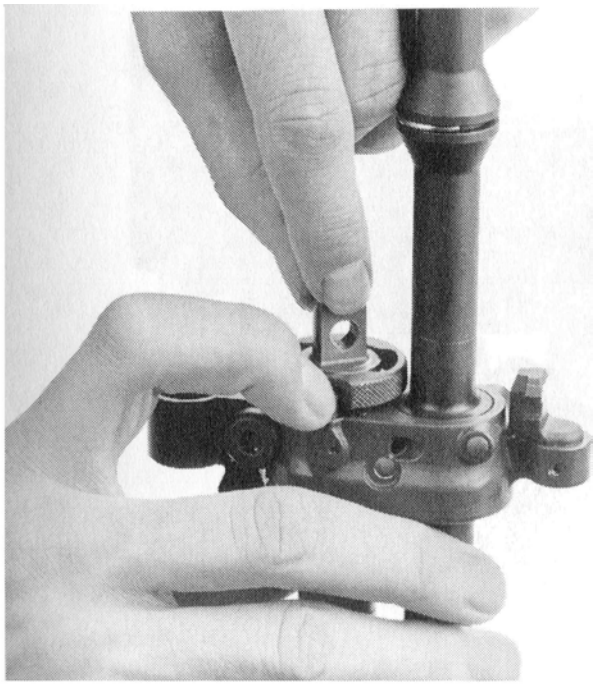
Remove bipod carrier from the handguard

11. Press in the gas valve catch, remove the valve by simultaneously rotating it and pulling it forward;

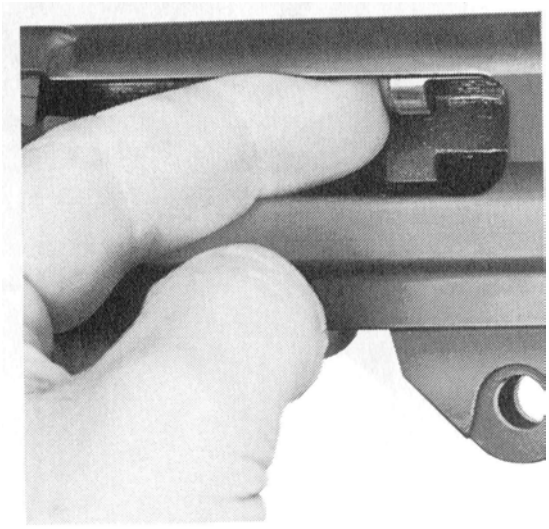
12. Push the Gas piston and recoil spring forward, reaching through the ejection port, and extract them from the front;

13. Press down the gas-valve catch and rotate the gas tube through 90^{o} so that the notch on the headpiece lies on the barrel;

14. Pull the gas tube out from the front end;



Remove gas valve



Push in gas piston

15. Remove the firing pin:

- Hold the bolt head against a firm surface in such a way that the firing pin is completely pressed into the bolt head;
- Remove the retention pin using a knife-edge and extract the firing pin and spring;

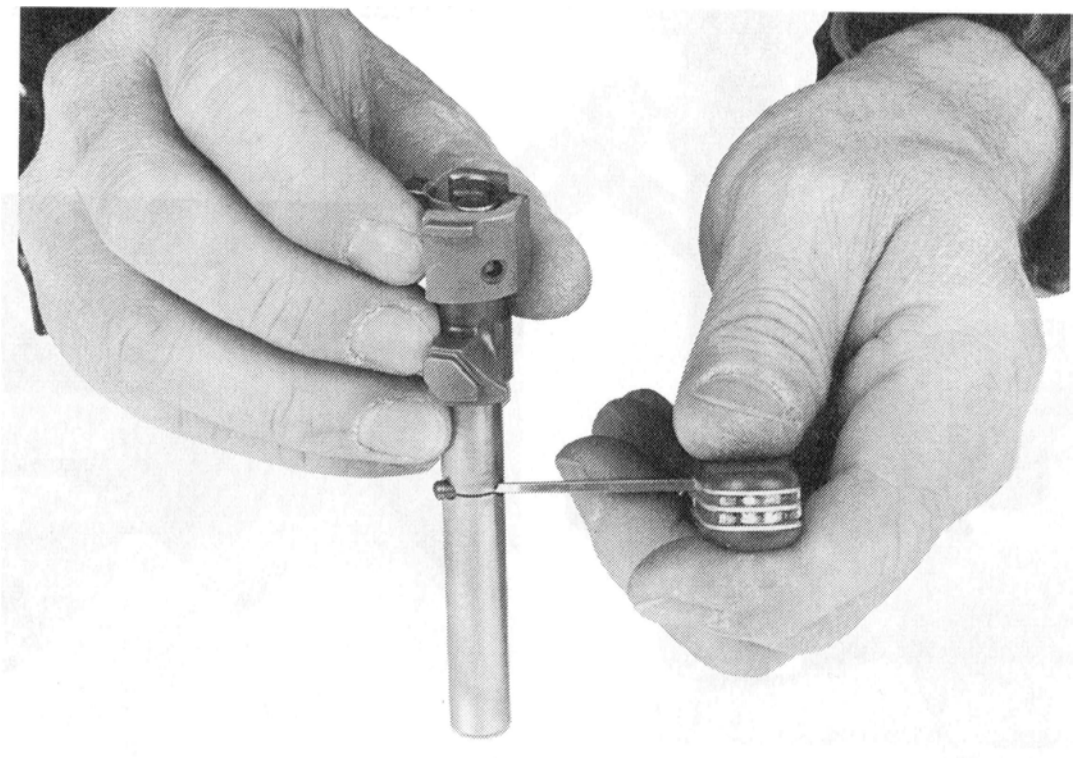
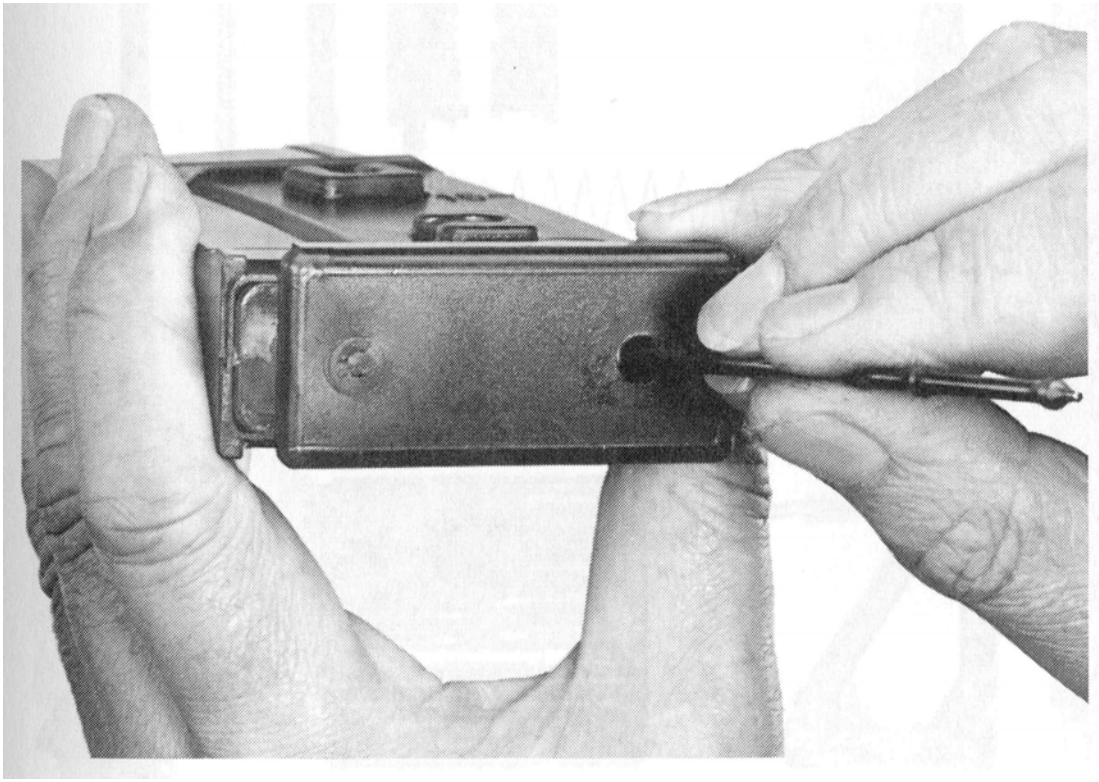


Figure 45

Remove firing pin

16. Dismantle the magazine;

- Press in the retention plug of the magazine floorplate with the thick end of the firing pin. Pull the magazine floorplate out from the rear;
- Pull out the floorplate catch along with the spring and follower.



Dismantle magazine

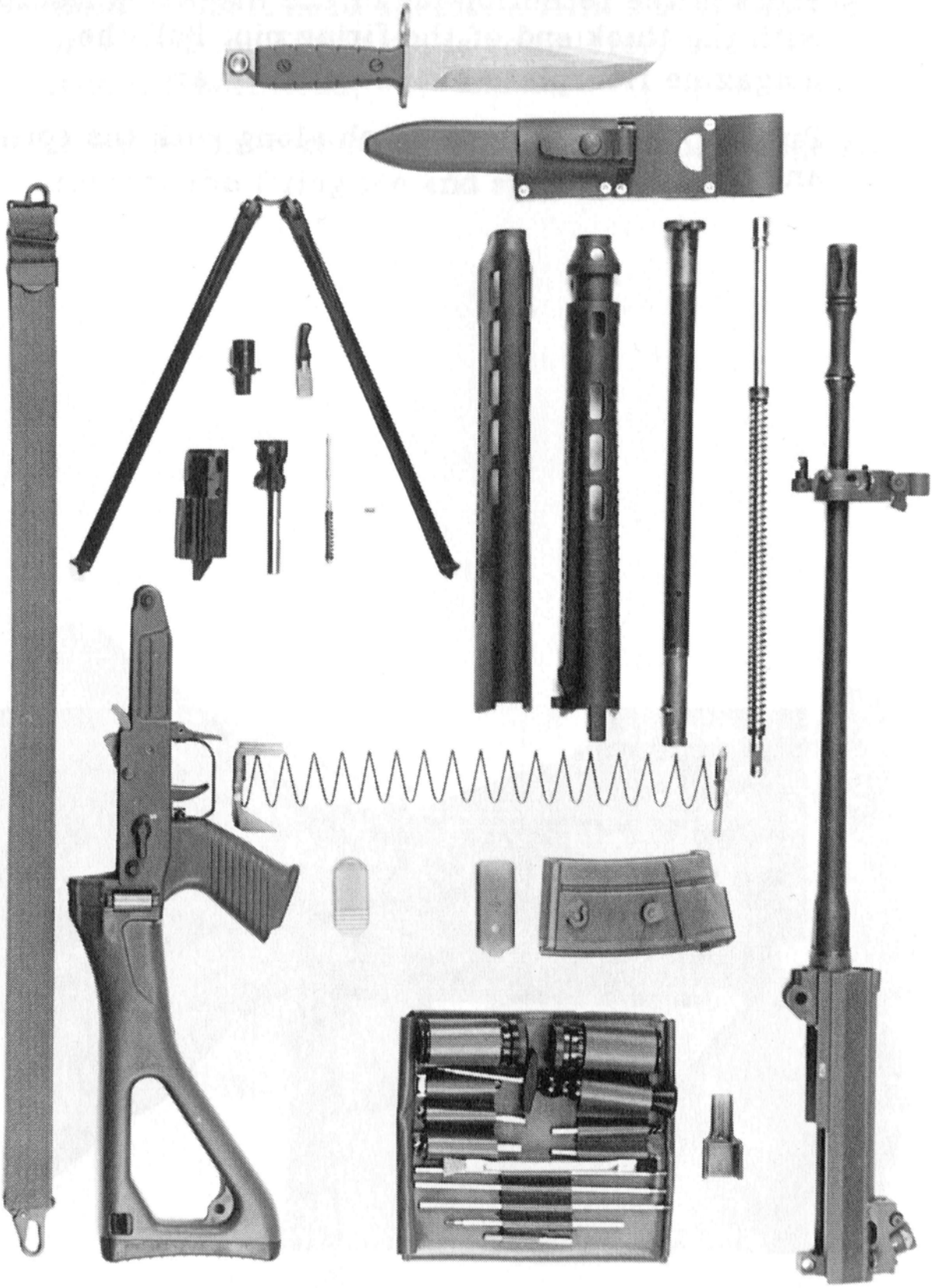


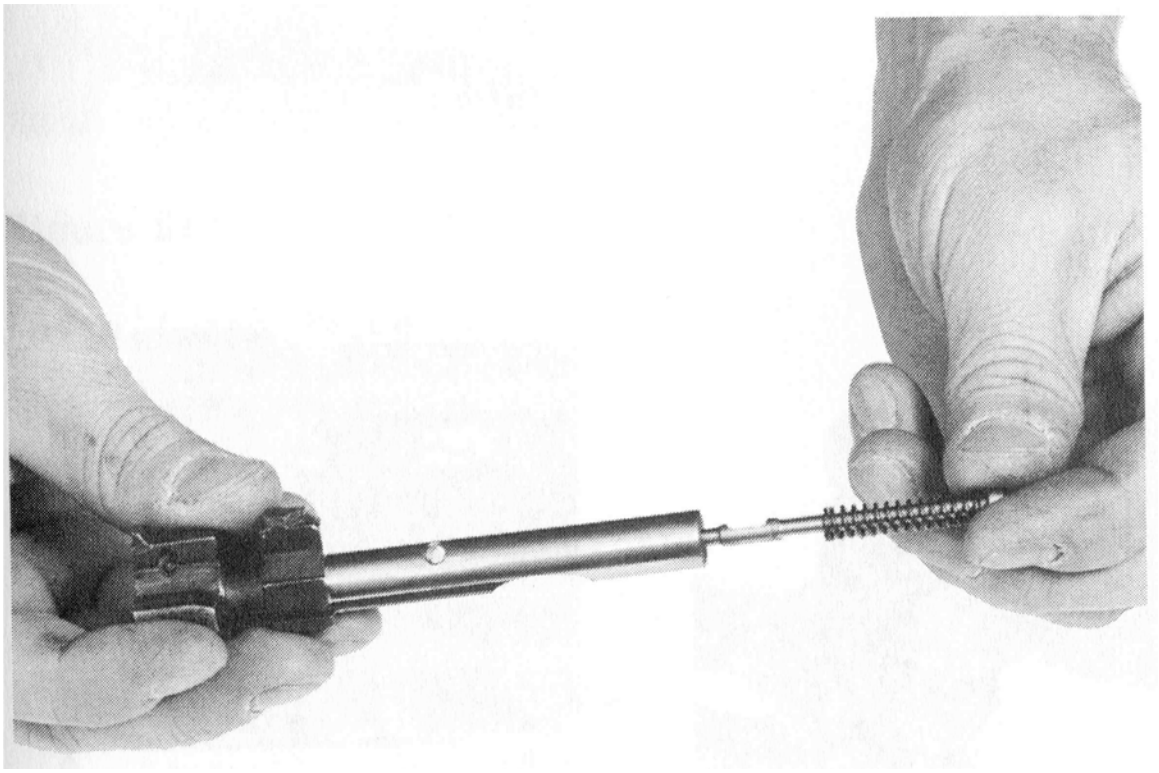
Figure 47

SIG SG 550 dismantled
3.14 Assembly

The weapon should always be reassembled in the reverse order of stripping:

1. Assemble magazine;

2. Insert firing pin:
   - Slip the firing pin into the bolt head.
     Ensure that the notch is correctly placed to accept the retention stud;
   - Push the firing pin into the bolt head an secure it with the retention stud as soon as the notch is flush with the bore;



Insert firing pin

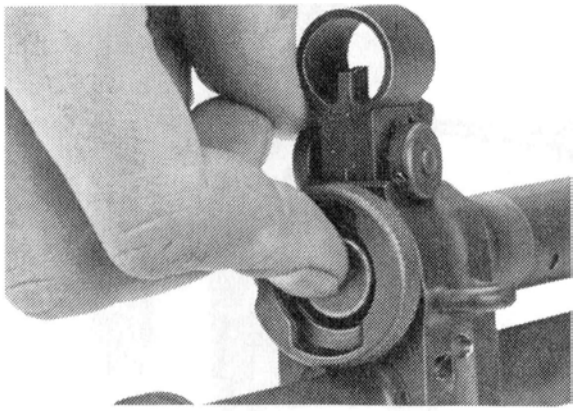
Correct position of the notch

3. Install the gas tube:
   - Slip the gas tube (flange notch pointing downwards) through the bore of the foresight mount and insert the end into the corresponding opening in the receiver;
   - Press the gas tube against the foresight mount and turn it through 90° to the right so that the retention stud of the gas valve registers in the flange;

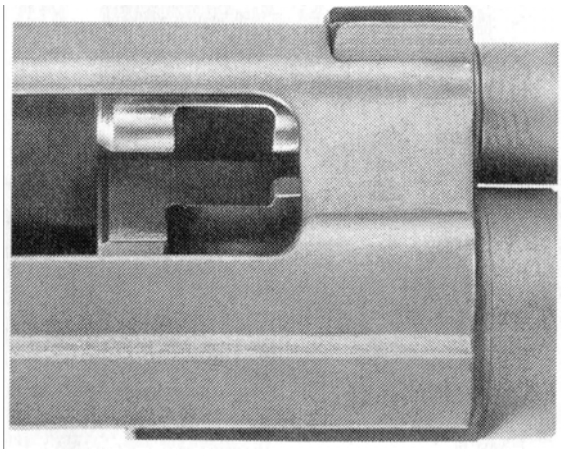
4. Insert the piston with the recoil spring:

   - Insert the piston, with its retention notch slide facing against the barrel, into the gas tube;

   - Check with forefinger that the gas piston moves freely in the tube;

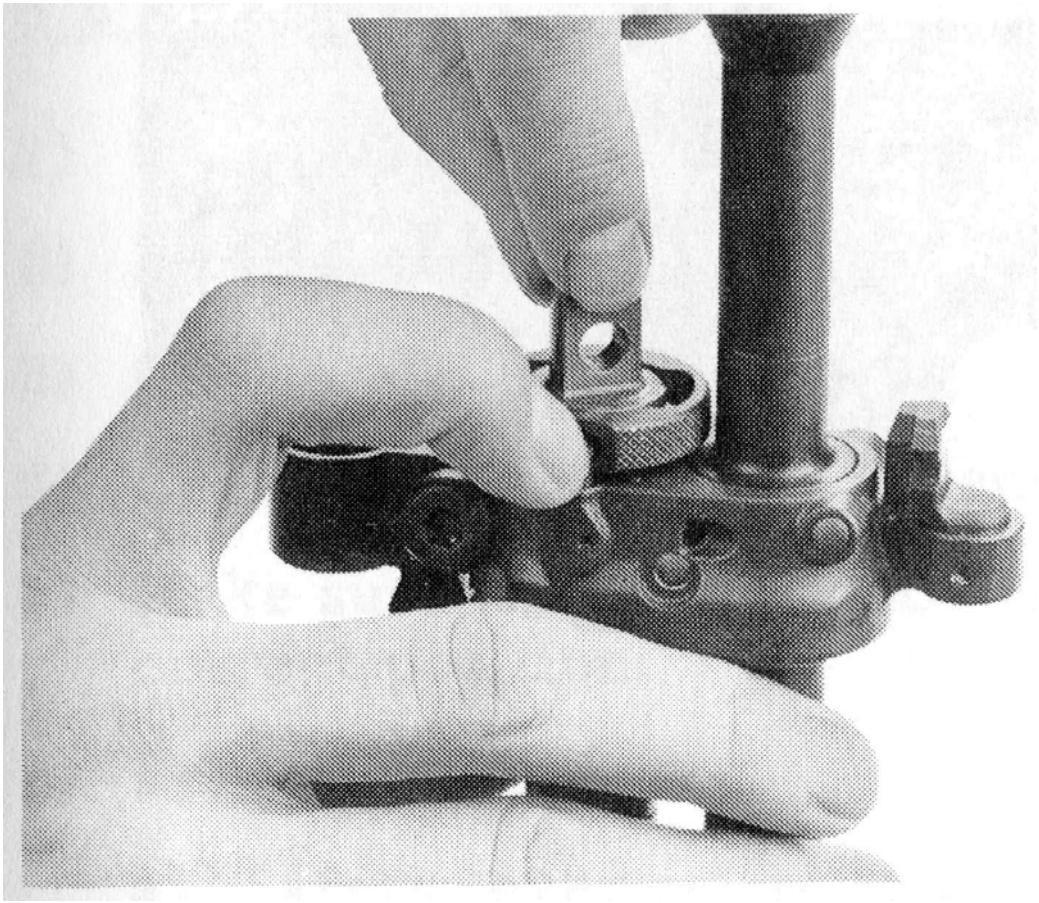


Check correct position with index finger



Correct position of retention notch

5. Install the gas valve:
   - With the notch for retention stud facing downwards in the flange of the gas tube;
   - Press in the catch and turn the gas valve to the right up to position I;
   - Check that the gas valve catch has registered;



Install gas valve

6. Install the upper handguard;
7. Attach the bipod;
8. Install the lower handguard;
9. Assemble bolt head and carrier;

10. Insert bolt assembly:
    - Slide bolt head completely to the front by pressing firing pin;
    - Slide bolt into receiver casing.

Inserting the bolt assembly

11. Insert the bolt handle into its slot in the bolt carrier and check that it has registered with the catch

12. Install trigger casing:
    - Ensure that the holes in the front trigger casing stud overlap;
    - Press the trigger casing stud through as far as the stop;
    - Tilt up the trigger casing and fix with rear trigger casing stud.

13. The function check should be carried out in accordance with section 3.16;

3.15 Function check

The function check described below is to be made after every stripping.

1. Unload per Section 3.3;

2. Make sure that bolt handle is engaged in correct position;

3. Functions:

a. Safety lever set to "S", carry out loading movement, pull the trigger:

- The hammer must not trip, the trigger must be blocked;

b. Safety lever set to "1", pull the trigger and hold it:

- The hammer must trip

Carry out loading movement with trigger being pulled:

- The hammer must not trip;

Release the trigger and pull it again:

- The hammer must trip;

c. Loading movement:

- Safety lever on "1": verify several times that there is a discernible pressure point;

4. Insert empty magazine and check firm seating;

5. Bolt catch;

a. Carry out loading movement;

- The bolt must be retained in the rear position;

b. Push up the bolt catch:

- The bolt must run forward;

- Check engagement of folded butt, pull the trigger and put the weapon on safe.

3.16. Procedure in case of malfunction

Whenever a SIG SG 550/551 SP no longer works due to a malfunction, proceed as follows:

- Carry out loading movement;
- Continue firing;

If the weapon does not fire:

- Insert a fresh magazine;
- Loading action;
- Continue firing;

If the weapon still does not fire:

- Put weapon on safe;
- Remove magazine;
- Loading action, hold the bolt in rearmost position, check ejection of cases and, if necessary, remove any jammed cases or cartridges;
- Turn gas valve to position II when weapon is heavily fouled or iced up;
- Insert a fresh magazine and load;
- Set safety lever to the desired firing mode, continue firing;

If the weapon still will not fire:

- Put weapon on safe;
- Unload per Section 3.3;
- Clean weapon in accordance with section 4.1;
- Take up firing position;
- Load;
- Set safety lever to the desired firing mode, continue firing;

If the weapon can not be unloaded or the fault rectified by the rifleman in accordance with the operating instructions, a trained expert must be consulted. The following points must be borne in mind:

- If the weapon can not be unloaded immediately and there is any danger that of self-ignition due to a hot barrel (140^{o}C), wait at least 15 minutes.
- The weapon must remain in position as long as it is loaded.
- Spectators and other unnecessary persons must be sent away so that the problem can be tackled carefully without disturbance.
- As long as the weapon is loaded, only trained experts should be allowed to manipulate the weapon.

Malfunctions can largely be avoided by:

- Cleaning the weapon according to item 4.1. after each period of firing, at the latest just after setting the gas valve to position II.
- Carrying out cleaning in accordance with the regulations
- Loading the magazine correctly.

4. Maintenance

4.1 Cleaning

The SIG SG 550/551 SP must be cleaned after each period of shooting. The following sequence must be adhered to:

1. Unload weapon per section 3.3.;
2. Field strip the weapon (see Section 3.13.);
3. Clean the barrel and cartridge chamber from the rear.
4. Clean the other parts of the weapon;
5. Lubricate the barrel and chamber using oil or grease;
6. Smear the other parts of the weapon lightly with gun oil or grease;
7. Reassemble the weapon in accordance with Item 3.14;
8. Carry out function check in accordance with Item 3.15.

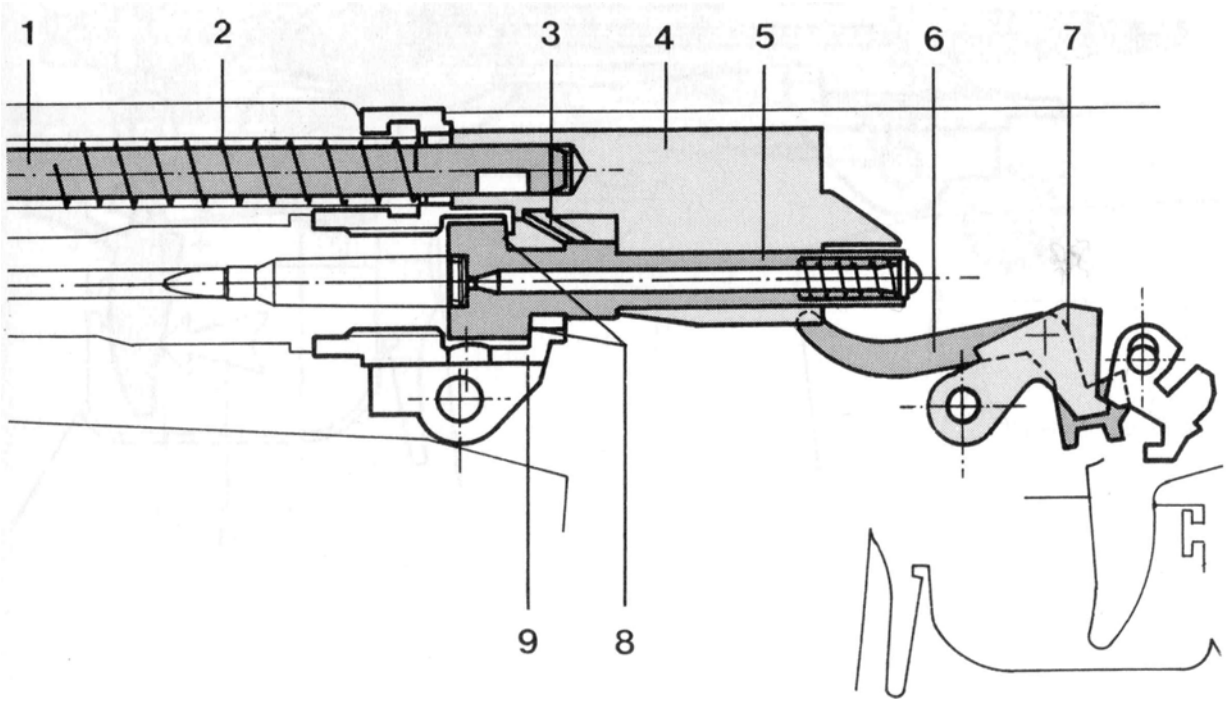
5. Function

5.1. Weapon function

5.1.1. Readiness to fire

At the moment of readiness to fire the bolt is closed and locked.

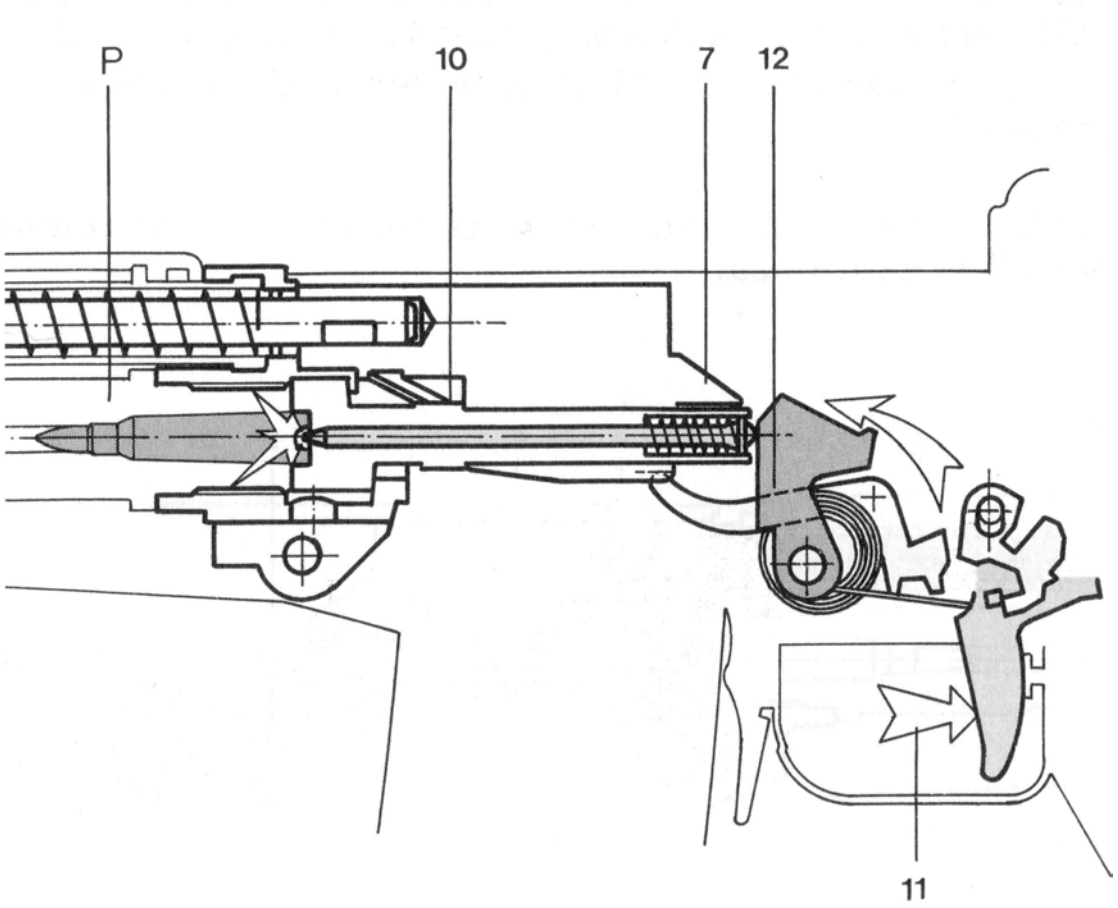
- The recoil spring [2] holds the bolt carrier [4] in the front final position, via the gas piston[1];
- The bolt head [5] is rotated by the control cam [3] of the bolt carrier [4] in such a way that its locking lugs [8] engage in the corresponding recesses of the locking piece [9];
- In this position the hammer [7] is cocked and the release bar [6] is depressed.



Weapon loaded

5.1.2. Discharging the shot

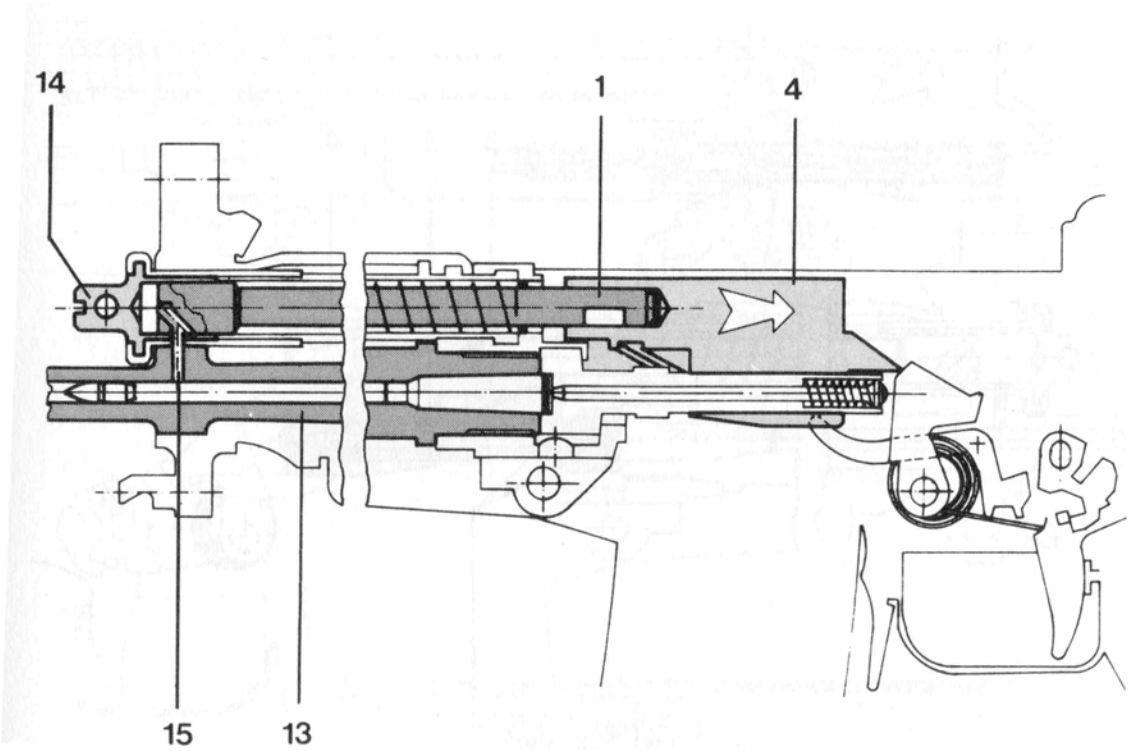
By pressing the trigger [11] the hammer [7] is released. The hammer is under pressure from the main spring [12] and strikes the firing pin [10] which, in turn, impacts against the cartridge primer of the cartridge [P] thus discharging the shot.



Discharging the shot

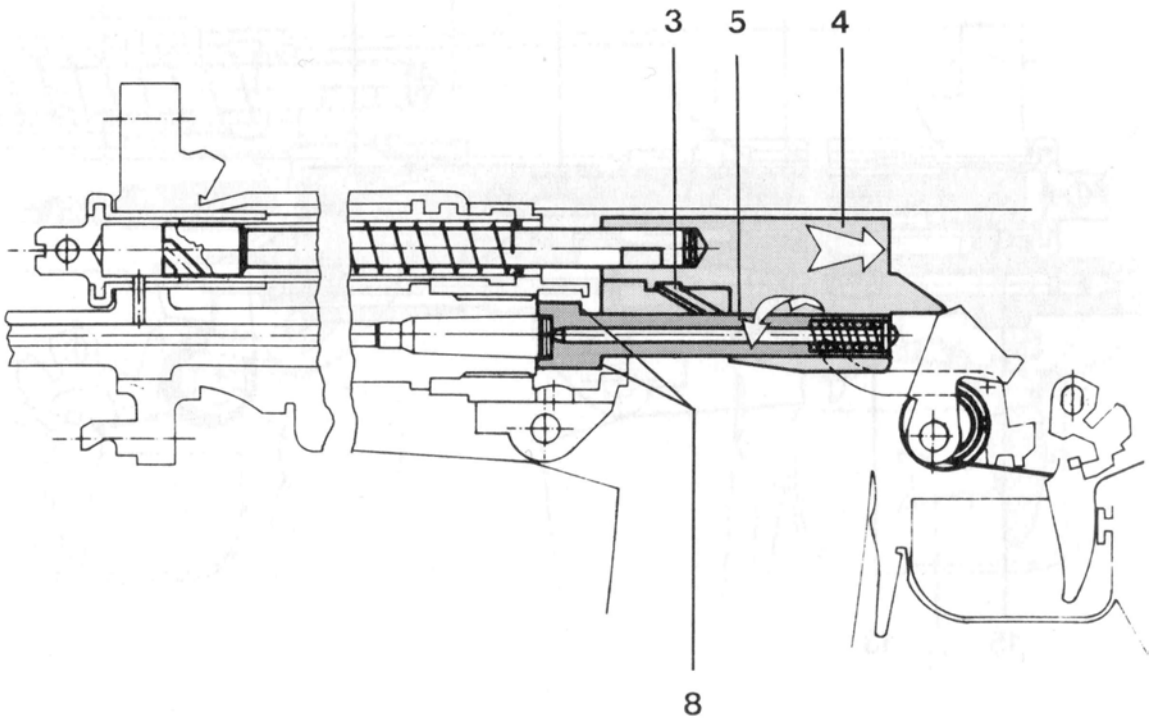
5.1.3. Unlocking and recoil of bolt

The gas pressure, generated by the burning powder, drives the bullet up the barrel [13]. As soon as the projectile passes the gas port [15], the propellant gas flows through the adjustable gas valve [14]. The gas pressure acts on the gas piston [1] which pushes the bolt carrier to the rear.



Bolt carrier recoil begins

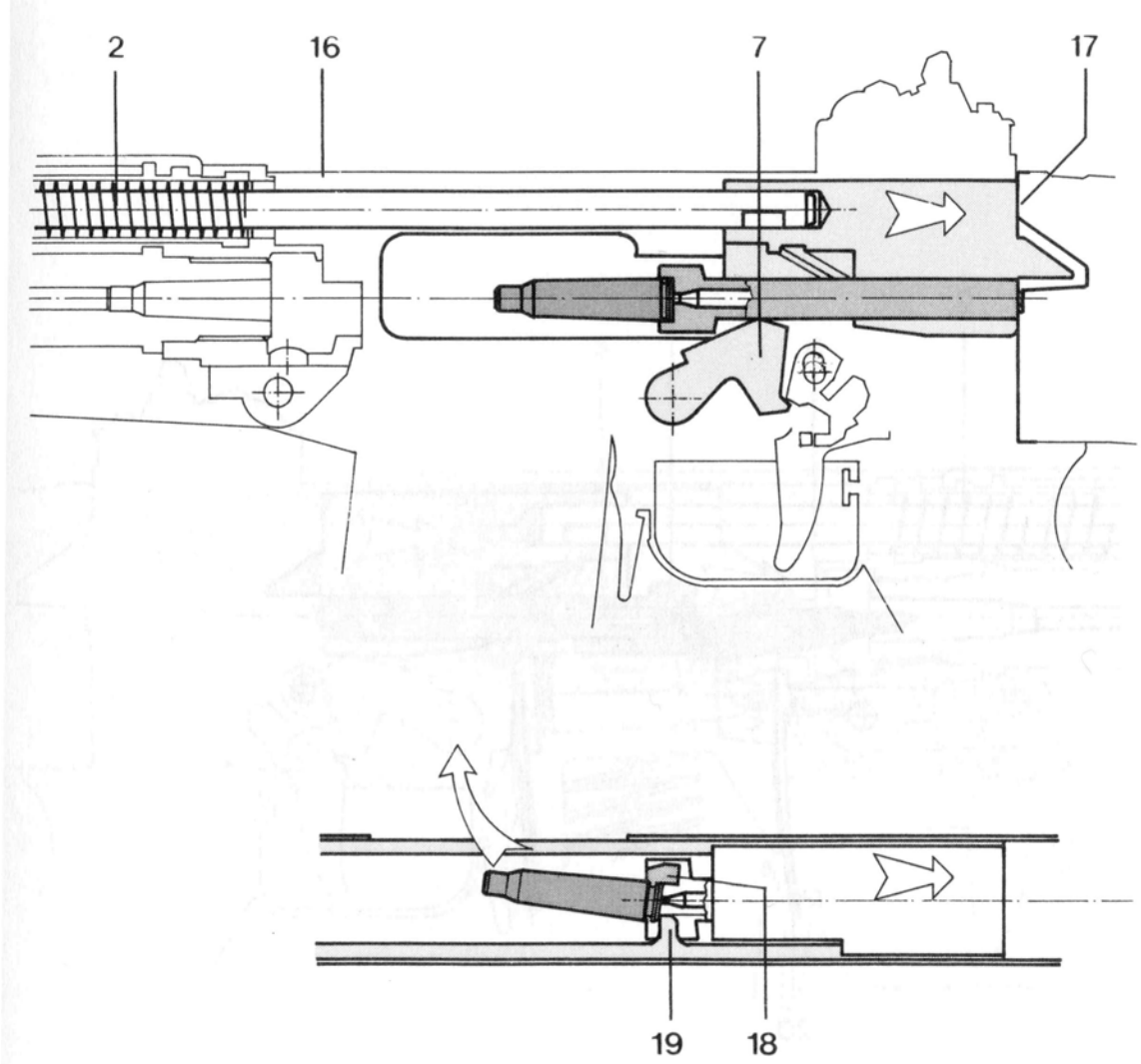
During the rearward motion of the bolt carrier [4] the bolt head [5] is rotated by the control cam [3] so that the locking lugs [8] are disengaged. The bolt is now unlocked.



Unlocking begins

The bolt assembly moves back along the rails in the receiver [16] as far as the stop [17] whereby:

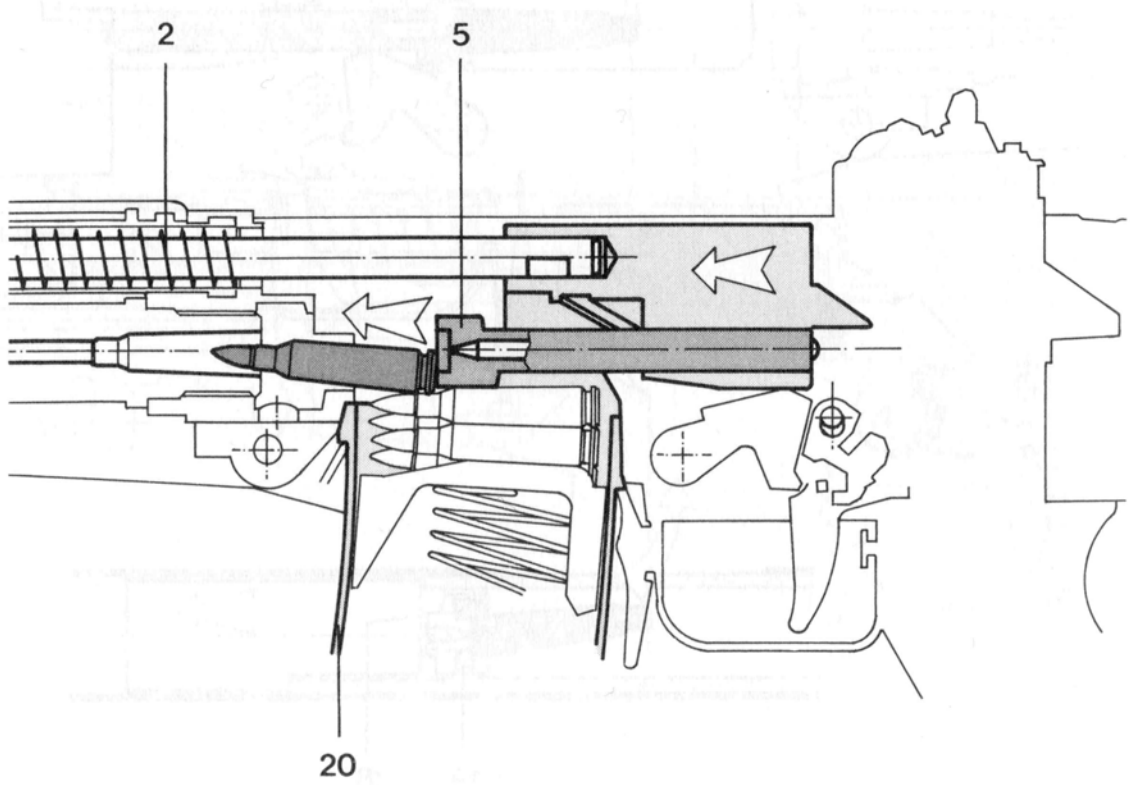
- The recoil spring [2] is compressed;
- The hammer [7] is cocked;
- The extractor [18] extracts the case from the chamber;
- The ejector [19] ejects the case through the port in the receiver [16].



Case ejection

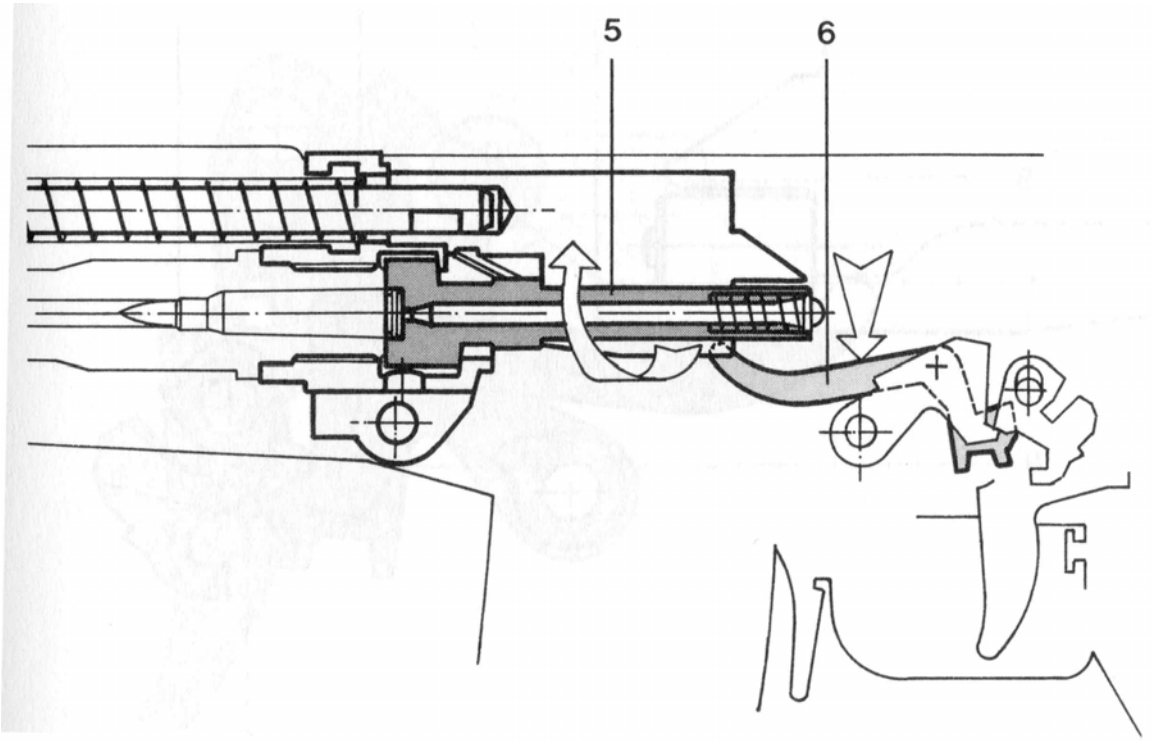
5.1.4. Bolt advance

The force of the compressed recoil spring [2] thrusts the bolt forward. The bolt head [5] feeds the next round from the magazine [20] into the chamber.



Bolt advance

In the final stage of the advance, the bolt head [5] locks up and the release bar [6] is depressed. The weapon is ready to be fired.



Locking

6. Appendix

6.1. list of parts

100 receiver

111. Receiver casing
141. Bolt cover
142. Rivet
151. Rear sight drum
152. Drum spring
153. Drum stud
154. Luminous ampoule*
155. Insert
156. Rubber disc
161. Pivot
162. Drum axle
163. Spring washer
164. Safety washer
165. Leaf spring
171. Windage correction screw
172. Click stud
173. Rear sight spring
174. Limitation spring
175. Spring pin
181. Elevation correction screw

200 Barrel / gas system

211. Barrel*
212. Front sight mount*
213. Roll pin
214. Spring ring**
221. Bayonet lug**
222. Spring pin
223. Stop pin
224. Compression spring
225. Spring pin
231. Front sight
232. Night front sight
233. Positioning bolt
234. Night front sight spring
235. Spring pin
236. Front sight screw
237. Front sight disc
238. Spring pin
241. Gas valve
251. Gas tube
261. Gas piston
262. Recoil spring
263. Spring pin
264. Spring pin
265. Spacer
268. Support washer

300 Handguard

311. Upper handguard
321. Lower handguard
330. Bipod complete**
331. Leg left**
332. Leg right**
333. Bipod carrier**
334. Stud**
335. Circlip**
336. Click stud**
337. Bipod spring**

400 Bolt

411. Bolt head
412. Firing pin
413. Firing pin stud
414. Firing pin spring
415. Extractor
416. Extractor spring
417. Pin
421. Bolt carrier
422. Bolt handle catch
423. Axel of bolt handle catch
424. Spring of bolt handle catch
425. Bolt handle

* Can not be ordered as individual parts
**Not on SG 551

500 Trigger assembly

501. Trigger casing
521. Magazine catch
522. Magazine catch spring
523. Magazine catch pin
524. Bush
541. Pistol grip
542. Floorplate
543. Allen screw
544. Stop nut
545. Nameplate
551. Pressure point screw
552. Stop nut
553. Pressure point spring
554. Trigger guard
555. Trigger guard bearing
561. Hammer
562. Hammer axle
563. Main spring
564. Bolt catch
565. Bolt catch spring
566. Spring bolt
571. Safety lever
572. Safety shaft
573. Locking spring
576. Spring pin
578. Stop ring
581. Trigger
582. Trigger spring
583. Trigger rod
584. Pivot trigger
585. Trigger bush
586. Trigger rod spring
591. Trigger casing stud
592. Spring –pressure pin
593. Spring for trigger casing stud
594. Spring pin
595. Pin
596. Cup spring

600 Butt

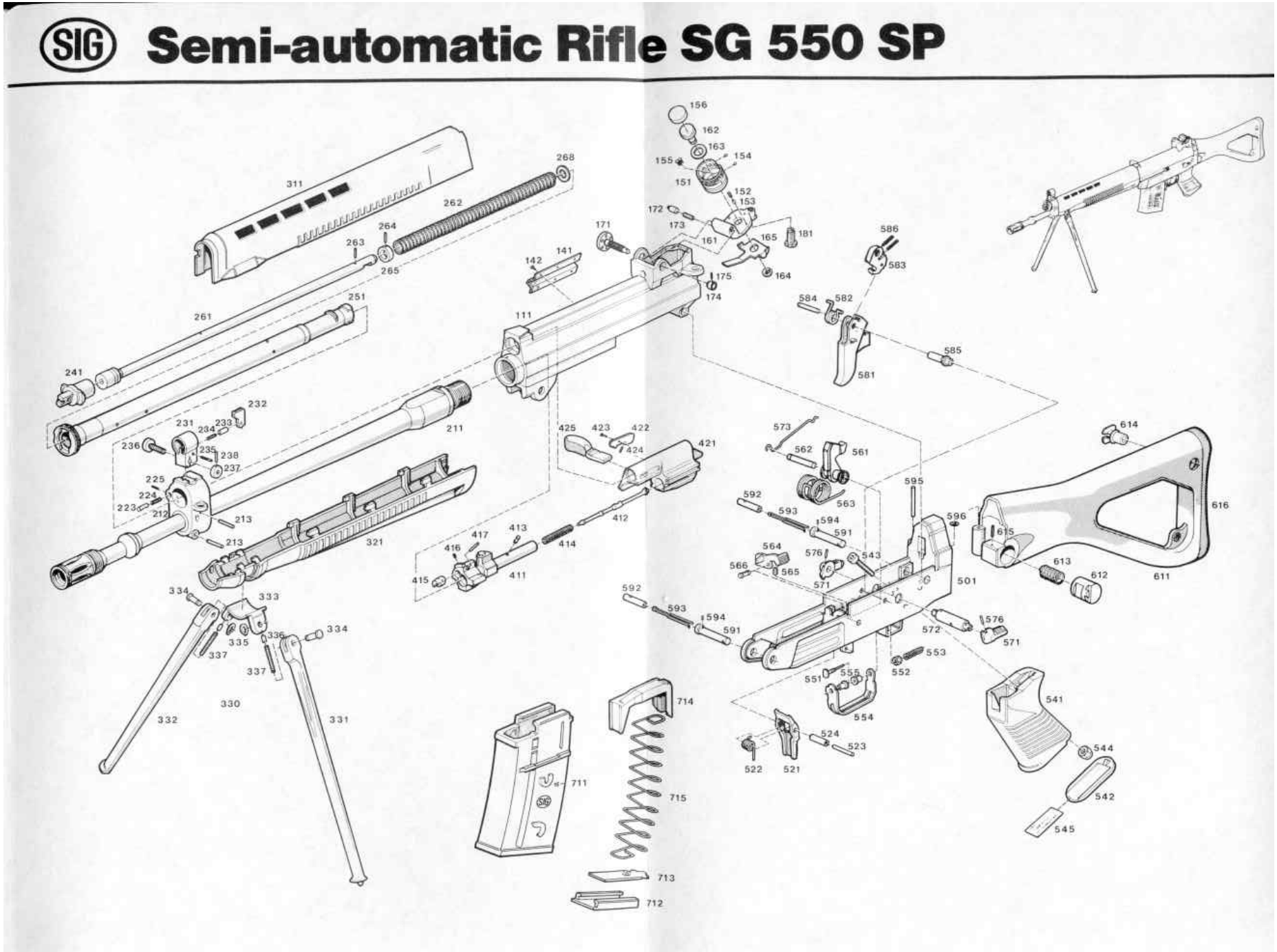
611. Buttstock
612. Butt catch
613. Butt catch spring
614. Clip
615. Spring pin
616. Butt

700 Magazine

711. Magazine casing
712. Magazine floorplate
713. Floorplate catch
714. Feeder
715. Magazine spring

6.2. Exploded drawing

Information to be supplied when ordering spare parts:

- Type of weapon
- Serial number
- Caliber
- Item number
- Parts designation

Semi-automatic Rifle SG 550 SP